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June 5, 2009

Mr. Carlton Bergman
Case Manager
New Jersey Department of Environmental Protection
Site Remediation Program
Bureau of Design & Construction
401 East State Street
Trenton, NJ 08625

Re: Air Equivalency Application for Cornell-Dubilier Electronics Superfund Site (Facility ID: 18786)

Dear Mr. Bergman:

Enclosed please find two copies of the air equivalency application package for the proposed low temperature thermal desorption (LTTD) unit and ancillary operations to be installed by Maxymillian Technologies at the Cornell-Dubilier Electronics (CDE) Superfund site located in South Plainfield, New Jersey. This remedial action is being performed pursuant to the U.S. Environmental Protection Agency's Record of Decision for Operable Unit 2, dated September 30, 2004. Based on our discussions, Maxymillian understands that an air equivalency application must be submitted to NJDEP prior to the construction of the LTTD unit and ancillary operations onsite.

In accordance with our conversations during the NJDEP pre-application meeting on April 30, 2009, please forward one copy of the air equivalency application package to Joel Leon or Mike Adhanom of the NJDEP Bureau of Preconstruction Permits (BPP). Please maintain one copy of the air equivalency application for your records.

Each copy of the air equivalency application contains the following elements:

- A disk containing the RADIUS application;
- A paper certification form signed by the Responsible Official; and
- A technical support document which contains supporting information for the air equivalency application as well as a printout of the RADIUS application, process flow diagrams supporting emission calculations for the proposed emission sources.

Maxymillian requests that NJDEP perform an expedited review of the air equivalency application for the following reasons:

- This site has received stimulus funding under the American Recovery and Reinvestment Act of 2009;
- The Borough of South Plainfield intends to implement a major transportation project in September 2009 that requires the remediation to be completed at a portion of the site; and
- The Borough of South Plainfield has designated a redeveloper and intends to redevelop the industrial park upon completion of EPA's remediation.

Please inform NJDEP BPP that Maxymillian wishes to commence construction activities in July 2009 and wishes to commence operations in August 2009.

If you have any questions concerning the enclosed permit application, please contact me at (413) 499-3050. Thank you.

Very truly yours,

MAXYMILLIAN TECHNOLOGIES, INC.

John Anthony
Senior Vice President

JBA/rs
f:rs/CDE/Air Permit Application Cover Letter.doc

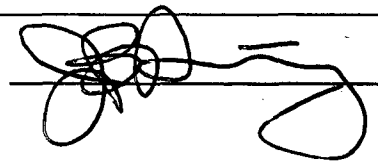
cc: Peter Mannino, Project Manager; USEPA; New York NY

CERTIFICATION

Facility ID: 18786
Facility Name: Maxymillian Technologies, Inc.

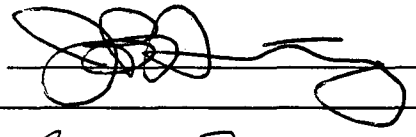
Responsible Official:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

Name: John Anthony **Signature:**  **Date:** 06 / 05 / 2009

Individuals with Direct Knowledge:

I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

Name: John Anthony **Signature:**  **Date:** 06 / 05 / 2009
Section Being Certified: All

Name: Christopher Fleck **Signature:** Christopher Fleck **Date:** 06 / 04 / 2009
Section Being Certified: All

Name: **Signature:** **Date:** / /
Section Being Certified:

Name: **Signature:** **Date:** / /
Section Being Certified:

Technical Support Document for Air Permit Application for Soil Treatment System at the Former Cornell-Dubilier Electronics (CDE) Superfund Site

Final Version

AECOM, Inc.
June 2009
Document No.: 01689-008-0005

AECOM

Prepared for:
Maxymillian Technologies, Inc.
Pittsfield, Massachusetts

Technical Support Document for Air Permit Application for Soil Treatment System at the Former Cornell-Dubilier Electronics (CDE) Superfund Site

Final Version

Prepared By Christopher Fleck, P.E.
Project Manager

Reviewed By Joseph Kwiatkowski
Project Manager

AECOM, Inc.
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AECOM

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1.0 Introduction

1.1 Project Overview

The Cornell-Dubilier Electronics (CDE) Superfund site (EPA ID# NJD981557879) is located at 333 Hamilton Boulevard in South Plainfield, New Jersey. In September 2004, the United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) for Operable Unit 2 (OU-2) to address the remediation of contaminated soils and buildings at the former CDE facility. EPA, with support from the U.S. Army Corps of Engineers, has completed several tasks associated with the OU-2 ROD, including the relocation of existing commercial tenants, the demolition of existing buildings at the former CDE facility and the excavation and the removal of an area of buried debris, known as the "capacitor disposal area". In accordance with the ROD, the next phase of the cleanup of OU-2 includes the on-site treatment of excavated soils amenable to treatment by low temperature thermal desorption (LTTD).

The U.S. Army Corps of Engineers is providing day-to-day field management of the OU-2 remedy for EPA, and Sevenson Environmental Services, Inc. (Sevenson) is the prime contractor. Maxymillian Technologies Inc. (Maxymillian) has been contracted by Sevenson to install and operate a LTTD unit to remove certain constituents from contaminated soil to meet the ROD cleanup criteria. The remediated soil will be re-used as "fill" at the facility. Maxymillian will utilize its Indirect Desorption System (IDS) for this project. The main contaminant of concern in the soil is PCBs, but the soil also contains concentrations of various metal and volatile HAPs. Soil excavation activities are to be conducted by Sevenson. Once the soil has been excavated, Maxymillian will transfer the excavated soil to the LTTD unit for further processing.

The EPA maintains that, as a Superfund Site, the acquisition of permits is not required for on-site remedial actions, but acknowledges that this does not remove the requirement to meet (or waive) the substantive provisions of permitting regulations that are applicable or relevant and appropriate requirements (ARARs). This requirement to meet ARARs is most often addressed by obtaining an equivalency permit for the proposed operation. EPA understands that the Department of Environmental Protection (NJDEP) has requested that NJDEP's standard air permit application process be followed to obtain an equivalency permit for the LTTD unit and ancillary equipment.

Since Maxymillian is the owner and operator of the LTTD unit and ancillary equipment (including soil handling equipment and wastewater treatment equipment), Maxymillian is submitting this air equivalency package for the proposed OU-2 remedy at the CDE site. Since Maxymillian is not performing soil excavation activities, these soil excavation activities are excluded from the scope of this air equivalency package. Based on the results of a risk screening analysis, the potential emissions from the LTTD unit and associated air pollution control system are below the NJDEP thresholds for both long-term (annual) and short-term (hourly) risk.

Per NJDEP's request, the air equivalency application is prepared using NJDEP's RADIUS software program. This Technical Support Document (TSD) provides additional information to supplement the air equivalency application prepared using NJDEP's RADIUS software program. A printout of the RADIUS equivalency application is provided in Appendix A of this TSD.

Maxymillian proposes to commence construction activities in July 2009 and commence operation in August 2009.

1.2 Site Description

The CDE Superfund site is located at 333 Hamilton Boulevard in South Plainfield, New Jersey. During its years of operation at the site (1936 to 1962), Cornell Dubilier Electronics, Inc. manufactured electronic parts and components, including capacitors. It is reported that transformer oils were tested for an unknown period of time during plant operations. During their operations, Cornell-Dubilier Electronics, Inc. dumped material contaminated with polychlorinated biphenyls (PCBs) and other hazardous substances directly onto site soils. The site is currently known as Hamilton Industrial Park.

The site has been divided into separate Operable Units (OUs). Operable Unit-1 (OU-1) consists of the residential, commercial, and municipal properties in the vicinity of the former CDE facility. Operable Unit-2 (OU-2) consists of contaminated facility soils and buildings. Operable Unit-3 (OU-3) addresses the contaminated groundwater, and Operable Unit-4 (OU-4) addresses contaminated sediments in the adjacent Bound Brook.

EPA issued a Record of Decision to address contaminated soils at OU-1 in September 2003, and portions of this remedy have already been completed. In September 2004, a Record of Decision was issued for the second operable unit (OU-2), addressing the remediation of the 25-acre former CDE facility, including contaminated facility soils and buildings. The first phase of this remedy (demolition of the onsite buildings) began in September 2007 and was completed in May 2008. Excavation of an area of buried debris, known as the "capacitor disposal area" began in February 2008 and was completed in June 2008. The remedial investigations for the contaminated groundwater (OU3) and contaminated sediments in the Bound Brook (OU-4) are ongoing.

As required by the OU-2 remedy for the 25-acre facility, EPA relocated tenants from the Hamilton Industrial Park by July 2007. Demolition of onsite buildings commenced in January 2007 and was completed by May 2008. Excavation of the "capacitor disposal area," an area of buried debris and the most highly contaminated portion of the site, was completed in June 2008. The next phase of the OU-2 remedy will address contaminated soils that will be treated on site using an LTTD unit.

Details regarding the proposed LTTD unit for the CDE site are addressed in this air equivalency application.

1.3 Emission Unit Description

The air emission sources for the proposed project are as follows:

Soil Handling Equipment;

LTTD Unit and Associated Air Pollution Control Devices;

Wastewater Treatment Equipment & Disposal Activities

Each of these operations is described in detail below.

1.3.1 Soil Handling Activities

Excavated soil from the Sevenson soil storage building is transported to the Maxymillian soil handling building by vehicle (i.e., front end loader). The soil will be piled in the building and worked with the loader to produce a homogeneous contaminant matrix. Soil is deposited into a feed soil hopper, passes through a soil screener and is then transferred onto the conveyor which feeds soil into the LTTD. Soil handling activities for the LTTD inlet are conducted indoors. An air handling system will be installed within the soil handling building so that potential emissions from soil handling activities can be diverted to a carbon adsorber unit and exhausted

through a point source (PT1). Since the soil handling activities are sources of particulate emissions, the carbon adsorber is not classified as an air pollution control device for the soil handling activities.

Soil exiting the LTTD unit is transferred by a conveyor and deposited on the ground near the LTTD. The cleaned soil is sprayed with water to increase the moisture content of the soil and to minimize fugitive dust emissions due to the transfer and storage of the soil. Once the soil is confirmed cleaned, Sevenson will transfer the cleaned soils to stockpiles for temporary storage prior to re-use as fill materials. Potential emissions from the LTTD outlet conveyor are not exhausted through a point source.

In the RADIUS application, the soil handling activities prior to the LTTD are represented by a single piece of equipment, Equipment ID – E1. The conveyor exiting the LTTD is represented by Equipment ID – E3 with emission point PT5.

1.3.2 LTTD Unit and Air Pollution Control System

The LTTD unit (Equipment ID – E2) is an indirect-fired rotary drum calciner in which contaminated soil is fed in one end of the calciner and cleaned soil is deposited out the other end. The LTTD unit has a maximum short-term soil processing capacity of 20 ton/hr and an annual average processing capacity of 18 tons/hr. The LTTD unit is fueled by propane and is equipped with six (6) burners with a total rated heat input capacity of 25.8 MMBtu/hr. The burners are equally spaced at the base of the outer wall of the calciner. The products of combustion are exhausted through one of three (3) stacks (PT2 – PT4) equally spaced along the top of the calciner. Each stack is twenty (20) feet high.

The vapor stream generated from the indirect heating of the soil is exhausted to an air pollution control system, which consists of several types of air pollution control equipment designed to remove these pollutants (for disposal). After passing through the air pollution control system, the vapor stream is to be re-injected at the base of the LTTD burners for "polishing" the vapor stream prior to discharge to the atmosphere through the LTTD stacks. The control devices in the air pollution control system are listed sequentially by Control Device ID number in Table 1-1 below:

Table 1-1: Air Pollution Control Devices for LTTD Unit

[illegible]	[illegible]	[illegible]
CD1	Baghouse	Remove particulates from vapor stream
CD2	Quench	Saturate vapor stream with water and cool vapor stream
CD3	Condenser (Lead/Standby Setup)	Cool gas stream and condense oil
CD4	Pre-Filter Box (Lead/Standby Setup)	Coalesce oil mists from vapor stream prior to entering carbon adsorbers
CD5	Coalescing Filter (Lead/Standby Setup)	
CD6	Primary HEPA Filter (Lead/Standby Setup)	
CD7	Primary Carbon Adsorber	Remove volatile HAPs from vapor stream
CD8	Secondary Carbon Adsorber	
CD9	Tertiary Carbon Adsorber	
CD10	Secondary HEPA Filter	Filter carbon particulates escaping carbon adsorber units prior to entering LTTD burners
CD11	LTTD Burners	Polish VOC and CO emissions from vapor stream before exhausting to atmosphere

A process flow diagram for the LTTD unit and associated air pollution control system is provided in Appendix B of this Technical Support Document.

1.3.3 Wastewater Treatment System

Liquid effluents from the air pollution control system are diverted to an onsite wastewater treatment system located within a building (separate from the soil handling operations). Liquid effluents initially pass through a filter press to remove solids that were not removed from the vapor stream by the baghouse. The liquid stream then flows through an oil-water separator where volatile organics are separated from the water stream. These volatiles, consisting primarily of PCB oils, are pumped to a 7500-gallon tank for storage prior to disposal. The water stream is pumped through a filtration unit to a 20,000-gallon tank for temporary storage prior to passing through a series of units designed to remove minor particulate and volatile impurities from the water prior to re-use. These units include a mixing/flocculation tank, water clarifier, head tank for pH adjustment, particulate filters, and liquid phase carbon beds. A simplified process flow diagram which illustrates the components of the wastewater treatment system is provided in Appendix B.

Filter Press

During normal operation, the filter press (Equipment ID – E4) is a closed unit which processes approximately 65 gallons per minute and removes solids from this liquid stream. However, approximately once a week, the filter press is opened to remove the collected solids and is cleaned. The filter press is open for approximately two hours during the emptying/cleaning process. The filter press solids and spent liquid and vapor phase carbon are deposited into a roll-off container which is covered when not in use.

Based on sampling data collected at other Maxymillian LTTD units processing for PCB-contaminated soils, the filter press solids will likely contain high concentrations of PCBs and minor concentrations (in units of parts per million) of benzene compounds such as benzene, chlorobenzenes and trimethylbenzenes. Benzene is classified as a Group I toxic substance (Group I TXS), and pursuant to N.J.A.C. 7:27-8.2(c)(2), any equipment that has the potential to emit any Group 1 at a rate greater than 0.1 pounds per hour qualifies as a significant source for air permitting purposes. Certain wastewater treatment operations also qualify as a significant source for air permitting purposes.

Since the concentration of benzene compounds in filter press solids is highly variable due to parameters such as concentration of benzene compounds in inlet soil concentration, it is difficult to estimate potential air emissions from the filter press cleaning operations. However, due to the existence of PCBs and benzene compounds in the filter press solids, Maxymillian proposes to install an air handling unit in the wastewater treatment building to address worker exposure to these materials and to address general safety concerns associated with operating electrical equipment in a potentially explosive environment (due to the possible high concentrations of volatiles indoors). To minimize VOC and HAP emissions due to filter press cleaning operations, Maxymillian proposes to vent the air handling system exhaust through a carbon adsorption unit (Control Device - CD12) prior to discharge to atmosphere through an emission point (PT6). By venting the air stream through carbon, potential emissions of benzene and other HAPs are estimated to be less than the pollutant-specific de minimis thresholds.

Furthermore, since VOC vapors can accumulate within the roll-off container between weekly filter press cleaning operations, Maxymillian proposes to apply a negative pressure to the roll-off container and vent the collected vapors to a separate carbon adsorption unit (Control Device - CD13).

Oil-Water Separator

An oil-water separator (Equipment ID – E6) is located after the filter press to separate oils from the liquid stream. The oil-water separator processes approximately 65 gallons per minute. Oils collected in the oil water separator are pumped to a 7500-gallon tank for storage prior to disposal. Liquid passing through the oil-water separator is pumped through filtration media to a 20,000-gallon tank for temporary storage prior to further processing.

Based on information generated using the EPA's WATER9 modeling program, hydrocarbons with low vapor pressures are expected to remain within the oils collected in the oil-water separator whereas hydrocarbons with high vapor pressure will likely volatilize. Although the oil-water separator is equipped with a cover to minimize VOC emissions during operation, fugitive emissions from the oil-water separator may occur. As stated above, the wastewater treatment building will be equipped with an air handling system. Emissions from the oil-water separator will be collected by the air handling system and diverted to a carbon adsorption unit (Control Device - CD12) prior to discharge to atmosphere through an emission point (PT6).

PCB Storage Tank

A 7500-gallon storage tank will be utilized to store PCB oils collected in the oil-water separator prior to loading into containers for off-site disposal. Pursuant to N.J.A.C. 7:27-8.2(c)(8), stationary storage tanks with a capacity of 2,000 gallons or greater which are used for the storage of a VOC or mixture of VOCs having a vapor pressure or sum of partial pressures of 1.0 millimeter of mercury (mm Hg) or greater at standard conditions qualify as significant sources for air permitting purposes. Pursuant to N.J.A.C. 7:27-8.2(c)(9), stationary storage tanks with a capacity in excess of 10,000 gallons and which are used for the storage of liquids, except water or distillates of air also qualify as significant sources for air permitting purposes.

PCB oils typically have low vapor pressures. For example, Aroclor 1254, a PCB commonly used in capacitors, has a vapor pressure of 7.71×10^{-5} mmHg at standard conditions. Although the oils recovered in the oil-water

separator are expected to be a mixture of PCBs and other volatiles, the overall vapor pressure of the PCB oil mixture is expected to be less than 1 mm Hg at standard conditions. Since the vapor pressure is not expected to exceed 1 mm Hg and since the tank capacity is less than 10,000 gallons, the PCB storage tank is considered an insignificant source for air permitting purposes.

Wastewater Treatment Equipment after the Oil-Water Separator

Wastewater treatment equipment located downstream from the oil-water separator includes a 20,000-gallon wastewater tank, a mixing/flocculation tank, water clarifier, head tank for pH adjustment, particulate filters, and liquid phase carbon beds. Pursuant to N.J.A.C. 7:27-8.2(c)(15), wastewater treatment equipment with an inlet solids content of less than two percent by weight does qualify as a significant source for air permitting purposes if the equipment does either of the following:

i. Treats or handles influent which has one or both of the following:

(1) A total concentration of VOCs and Group 2 TXS in the influent of 3,500 parts per billion by weight (ppbw) or more; or

(2) A total Group 1 TXS concentration in the influent of 100 ppbw or more; or

ii. Discharges more than 50 pounds per hour of sludge. For the purposes of this paragraph, wastewater with a solids content of two percent by weight or greater is considered sludge;

After the wastewater passes through the filter press and oil-water separator, the solids content and VOC concentration are expected to be below these thresholds. Consequently, this equipment qualifies as an insignificant source for air permitting purposes.

1.4 Raw Materials Used

The contaminated soil from the CDE site is the only raw material utilized in this process.

2.0 Potential Emissions Summary

2.1 Soil Handling Activities

Soil handling activities are potential sources of particulate emissions, both total suspended particle matter (TSP) and particulate matter less than 10 microns in diameter (PM_{10}). However, due to the moisture content of the LTTD inlet and outlet throughputs, particulate emissions from soil handling activities are expected to be relatively small.

Potential emissions from soil handling activities were estimated using emission calculation methodologies specified in AP-42 Chapter 13.2.4 and utilizing site-specific parameters such as local wind speed and soil moisture content. Potential emissions from soil screening activities were estimated using emission factors referenced from AP-42 Chapter 11.19.2, Table 11.19.2-2.

Based on these methodologies, particulate emission estimates from soil handling activities do not exceed the reporting thresholds for TSP of PM_{10} as specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Detailed calculations are provided in Appendix C.

2.2 LTTD Unit

Combustion Emissions

The LTTD unit is a propane-fired combustion unit with a rated capacity of 25.8 MMBtu/hr. Potential emission rates of nitrogen oxides (NOx) and carbon monoxide (CO) are based on vendor guaranteed emission rates (0.11 lb/MMBtu for NOx and 0.15 lb/MMBtu for CO) provided by Fives North American Combustion, Inc. Potential emission rates of VOC, TSP, PM_{10} and sulfur dioxide (SO_2) from the combustion of propane in the LTTD were estimated using AP-42, Fifth Edition, Section 1.5, Supplement D (dated July 2008). Due to the relatively small firing capacity of the LTTD unit, only the potential emissions of NOx and CO exceed the reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Detailed calculations are provided in Appendix C.

Potential emission estimates for NOx and CO exceed NJDEP's State-of-the-Art (SOTA) threshold of 5 ton/yr per pollutant. SOTA evaluations for these pollutants are provided in Section 3.2 of this Technical Support Document.

Process Emissions

Process emissions from the LTTD are based on the based on the following parameters:

- A maximum short-term soil feed rate of 20 ton/hr and an annual average soil feed rate of 18 tons/hr;
- The maximum and average soil concentration data are based on soil data collected during the Remedial Investigation (RI) conducted by Foster Wheeler (*Tetra Tech-Foster Wheeler, Inc., December 2002. "Final Remedial Investigation Report for Operable Unit 2 (OU-2) On-Site Soils and Buildings – Volume I and II" Cornell-Dubilier Electronics Superfund Site, South Plainfield, New Jersey*) and during the Pre-Design Investigation (PDI) conducted by Malcolm Pirnie (*Malcolm Pirnie, Inc., August 2007. "Final Soils Pre-Design Investigation Report Operable Unit 2." Cornell-Dubilier Electronics Superfund Site South Plainfield, NJ (pending approval)*);

- A maximum entrainment of 20% of the metals concentration in the soil (except for mercury, which was assumed to be 100% volatilized) into the air stream to be treated by the air pollution control system; and
- Negative pressure is maintained on the LTTD equipment to ensure 100% capture of volatilized or entrained material.

Potential emissions from the LTTD unit were based on the overall control efficiencies for the following pollutants:

- VOC: 99.5%
- Volatile HAPs & Dieldrin: 99.981%
- Metal HAPs (including Lead): 99.999%
- PCBs: 99.9999%

Maxymillian anticipates that the LTTD system proposed for the CDE site will meet or exceed the control efficiencies identified above based upon prior historical performance of this unit. The LTTD system has achieved a PCB control efficiency exceeding 99.9999% at similar projects summarized in Table 2-1 below.

Table 2-1: Previous Projects of Maxymillian's LTTD Unit, the Indirect Desorption System (IDS)

Location	Contaminants
GE Dragstrip – NY	PCBs
Lockheed Martin – CO	VOCs
AAG/Sprague I – MA	PCBs/VOCs
AAG/Sprague II – MA	PCBs/VOCs
BRA Convention Center – MA	PCBs
Leighton – Hong Kong, China	Dioxins
Yankee Rowe – MA	PCBs
GAFRI/Sprague – MA	PCBs/VOCs/SVOCs

These performance criteria were utilized during the preparation of the health risk screening analysis described in Section 3.1 of this Technical Support Document. Based on the control efficiencies proposed, the post-control emission rates of soil contaminants are below the pollutant-specific reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Detailed calculations are provided in Appendix C.

2.3 Wastewater Treatment Operations

Filter Press

During normal operation, the filter press is a closed unit. During filter press unloading and cleaning operations, the filter press is open for approximately two hours during the emptying/cleaning process.

Particulate emissions can occur due to the emptying of the filter press. VOC and HAP within the filter press solids can volatilize during the emptying/cleaning process.

Potential emissions for TSP and PM_{10} were estimated using emission calculation methodologies specified in AP-42 Chapter 13.2.4 and utilizing site-specific parameters such as soil moisture content. Due to the moisture content of the filter press solids, TSP and PM_{10} were estimated at levels below the reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Detailed calculations are provided in Appendix C.

VOC and individual HAP emissions were estimated using engineering judgment based on the estimated volume displaced during the emptying and cleaning of the filter press and VOC concentration data in solids, which were estimated based on an analysis of filter press solids from a similar facility. Since the filter press solids have a high concentration of PCBs and since PCBs typically have a low pressure at standard conditions, VOC and individual HAP emissions were estimated at levels below the reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Detailed calculations are provided in Appendix C.

Oil-Water Separator

An oil-water separator is located after the filter press to separate oils from the liquid stream. Based on information generated using the EPA's WATER9 modeling program, hydrocarbons with low vapor pressures are expected to remain within the oils collected in the oil-water separator whereas hydrocarbons with high vapor pressure will likely volatilize. Although the oil-water separator is equipped with a cover to minimize VOC emissions during operation, fugitive emissions from the oil-water separator may occur. Emissions from the oil-water separator will be collected by the air handling system within the wastewater treatment building and diverted to a carbon adsorption unit prior to discharge to atmosphere. Consequently, potential emissions of VOC and HAPs are assumed to be below the reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B.

PCB Storage Tank

PCB oils typically have low vapor pressures. Although the oil recovered in the oil-water separator are expected to be a mixture of PCBs and other volatiles, the overall vapor pressure of the PCB oil mixture is expected to be less than 1 mm Hg at standard conditions (i.e., Aroclor 1254 has a vapor pressure of 7.71×10^{-5} mmHg at standard conditions).

Since the vapor pressure is not expected to exceed 1 mm Hg and since the tank capacity is less than 10,000 gallons, the PCB storage tank is considered an insignificant source for air permitting purposes. Consequently, potential air emission estimates were not prepared for this emission source.

Wastewater Treatment Equipment After the Oil-Water Separator

Wastewater treatment equipment located downstream of the oil-water separator includes a filtration media vessel, a 20,000-gallon wastewater tank a mixing/flocculation tank, water clarifier, head tank for pH adjustment, particulate filters, and liquid phase carbon beds. After the wastewater passes through the filter press and oil-water separator, the solids content and VOC concentration are expected to be below these thresholds. Consequently, potential air emission estimates were not prepared for this emission source as this equipment qualifies as an insignificant source for air permitting purposes.

3.0 Regulatory Review

3.1 State Regulations

3.1.1 Air Quality Impact Analysis / Air Toxics Risk Assessment – N.J.A.C. 7:27-8.5

Pursuant to N.J.A.C. 7:27-8.5, an air quality impact analysis and/or air toxics risk assessment may be required by NJDEP to evaluate the impact of the emissions proposed in the air equivalency application. Since the contaminated soils to be processed in the proposed LTTD unit are listed in N.J.A.C. 7:27-8, Appendix 1, Tables A & B, a first-level risk screening analysis was prepared based on the guidance provided in NJDEP's *Technical Manual 1003 (Guidance on Preparing a Risk Assessment for Air Contaminant Emissions)* and NJDEP's standard risk screening spreadsheet.

LTTD Unit – Process Emissions

Based on the soil sampling data for the CDE facility, the LTTD unit has potential emissions of several volatile HAPs and metal HAPs. However, based on the control efficiencies proposed for the air pollution control devices, the post-control emissions from the LTTD unit do not exceed the pollutant-specific reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B.

Currently, the LTTD unit is to be located a minimum of 200 feet from the nearest property line. Each of the three (3) LTTD stacks has a stack height of 20 feet. Although the LTTD unit will have three stacks, a single representative stack (20 feet in height) was used in the risk screening analysis. Since post-control emissions of each pollutant is below NJDEP's de minimis thresholds and since NJDEP's current policy is to exclude pollutants with de minimis emissions from the first-level screening analysis, the results of the risk screening analysis for the LTTD unit are zero as shown in Appendix C and in Table 3-1 below.

Table 3-1: Risk Screening Summary for LTTD

Stack ID	Long-Term Cancer Risk	Long-Term Hazard Index	Short-Term Hazard Index
PT2/PT3/PT4	0	0	0
NJDEP Negligible Threshold	1.0×10^{-6}	1.0	1.0
NJDEP Case-By-Case Threshold	1.0×10^{-4}	Not Applicable	Not Applicable
Results	Negligible	Negligible	Negligible

Based on the results of the risk screening analysis, the incremental long-term cancer risk and the long-term and short-term hazard indices are each below NJDEP's thresholds (for negligible risk).

Wastewater Treatment Operations

Potential emissions from wastewater treatments are expected to be below the pollutant-specific reporting thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Consequently, a first-level health risk screening analysis was not prepared for this emission source.

3.1.2 State-of-the-Art (SOTA) Analysis – N.J.A.C. 7:27-8.12

Pursuant to N.J.A.C. 7:27-8.12, the air permit application must include a SOTA analysis if post-control emissions of one or more pollutants exceed the pollutant-specific SOTA thresholds specified in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. The SOTA evaluation is performed on a "per piece of equipment" basis.

Soil Handling Operations

Potential emissions from soil handling operations are below the reporting thresholds in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Consequently, a SOTA analysis is not required for this equipment.

LTTD Unit – Combustion

Potential post-control emissions from the combustion equipment associated with the LTTD unit will exceed the SOTA thresholds for the following pollutants:

Pollutant	SOTA Threshold
NOx	5.0 ton/yr
CO	5.0 ton/yr

Based on NJDEP's SOTA Manual for Boilers and Process Heaters (dated February 2004), the SOTA performance levels for gas-fired boilers and process heaters with a maximum heat capacity between 10 and 50 MMBtu/hr are summarized in Table 3-2 below.

Table 3-2: SOTA Requirements for Gas-Fired Units with Capacities Between 10 and 50 MMBtu/hr

Pollutant	Emission Level (lb/MMBtu)	Control Technology
NOx	0.035	Low NOx Burners (LNB) with Flue Gas Recirculation (FGR) or Ultra Low NOx Burners (ULNB)
CO	0.05	Good Combustion Controls

NOx Control Technology Evaluation

The LTTD unit is similar in function to a boiler in that it is an indirect-fired combustion unit. However, the burners installed on the LTTD unit are flat-faced burners designed to heat the outer shell of the calciner, which heats the soil located in the inner shell of the calciner. Based on discussions with North American Burner, the installation of LNB or ULNB on the flat-faced burners is not technically feasible because this technology is not commercially available for this type of burner. Since the LTTD unit was specifically selected as the technology to remediate the soils at the CDE facility, the LTTD unit cannot be replaced with another fuel combustion source. Consequently, Maxymillian requests that the vendor-guaranteed NOx

emission rate of 0.11 lb/MMBtu be deemed SOTA for the LTTD unit. This emission rate is lower than the NOx emission factor of 0.14 lb/MMBtu for propane-fired combustion units specified in AP-42 Chapter 1.5.

CO Control Technology Evaluation

Based on the information in the NJDEP's SOTA Manual, the SOTA emission level of 0.05 lb/MMBtu for gas-fired boilers has been achieved with combustion controls. The LTTD unit differs from a traditional boiler or process heater due to the aforementioned use of flat-faced burners and since the post-control vapor stream is re-fed into the LTTD combustion zone for polishing CO and VOC emissions prior to discharge. The LTTD unit is operated using good combustion practices to maintain for efficient operation of the LTTD unit. Consequently, Maxymillian requests that the vendor-guaranteed CO emission rate of 0.15 lb/MMBtu be deemed SOTA for the LTTD unit.

LTTD Unit - Processing

Potential post-control emissions from the soil processing operations within the LTTD are below the reporting thresholds in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Consequently, a SOTA analysis is not required for this equipment.

Wastewater Treatment Operations

Potential emissions from wastewater treatment operations are below the reporting thresholds in N.J.A.C. 7:27-8, Appendix 1, Tables A & B. Consequently, a SOTA analysis is not required for this equipment.

3.1.3 Proposed Parametric Monitoring for Air Pollution Control System

Since the air pollution control system consists of a series of control devices for which an overall control efficiency for VOC, organic HAPS and metal HAPs is to be achieved, Maxymillian proposes the following operating ranges for the air pollution control equipment and proposes to conduct monitoring and recordkeeping of these parameters as specified in Table 3-3 below.

Table 3-3: Proposed Parametric Monitoring for Air Pollution Control System

Control Device ID	Control Device Description	Main Parameter(s) Monitored	Proposed Operating Range / Requirements
CD1	Baghouse	Pressure Drop (inches w.c.)	1 – 12 inches
CD2	Quench	Quench Flow Rate (gpm)	100 – 260 gpm
CD3	Condenser	Contaminant Side Outlet Temperature (°F)	32 – 60°F
CD4 CD5 CD6 CD10	Pre-Filter Box Coalescing Filter HEPA Filter HEPA Filter	Calciner Face Pressure (inches w.c.)	(-1) – 0 inches w.c.
CD7	Primary Adsorber	Soil Processing Rate in LTTD	Replacement after processing 10,000 tons of soil.
CD8 CD9	Secondary Adsorber Tertiary Adsorber	Soil Processing Rate in LTTD	Replace primary/secondary canisters every 10,000 tons of soil processed.
CD11	Burners	Process Monitors for CO, VOC & O_2	Monitor/record once per day during operation. CO Limit: 100 ppmvd @ 7% O_2 VOC Limit: 50 ppmvd @ 7% O_2

Notes:
The LTTD unit must be operated for at least 24 hours before the pressure drop within the baghouse reaches the proposed operating range of 1 – 12 inches.
The operating range for the calciner face pressure is -1 to 0 inches w.c. The soil feed to the LTTD will be automatically cut-off if the face pressure operates at -0.1" w.c. for more than 5 minutes or at 0.0" w.c. for more than 30 seconds.
After a discussion with NJDEP/BTS personnel, and due to the relatively small rated capacity of the LTTD unit and the short project duration, Maxymillian proposes to utilize portable process monitors (rather than a continuous emission monitor {CEM}) to measure CO and VOC emissions from a representative LTTD stack once per day.

3.1.4 Demonstration Test

Based on discussions with NJDEP Bureau of Preconstruction Permitting (BPP) and Bureau of Technical Services (BTS), Maxymillian proposes to perform a demonstration test for the LTTD unit within 60 days of startup. Due to the configuration of the air pollution control system, Maxymillian proposes that stack testing be conducted in two locations. Testing for PCBs, particulate matter and metal HAPs (such as lead) is to be conducted within a 6" line located after the carbon canister HEPA filter prior to the vapor stream entering the LTTD burners. Testing for CO and VOC will be tested at the center LTTD stack. Since the six propane burners are evenly distributed along the base of the LTTD unit and since the vapor stream is injected into the LTTD burners beneath the center stack, representative stack testing for CO and VOC is proposed at the center stack.

During the stack test, Maxymillian proposes to demonstrate compliance with the short-term mass emission rate (i.e., lb/hr emission rates) for the pollutants tested. Maxymillian will prepare a stack test protocol for submittal to BTS prior to conducting the performance tests.

4.0 Summary and Conclusions

Maxymillian requests that NJDEP process this air equivalency application on an expedited basis so that construction can commence as soon as possible. The installation of the LTTD unit and ancillary equipment will enable Maxymillian to commence soil treatment activities at the CDE facility. Maxymillian proposes to commence construction activities in July 2009 and commence operation in August 2009.

The equipment within this air equivalency application is not subject to Prevention of Significant Determination (PSD), non-attainment New Source Review (n-NSR) or Title V requirements.

Appendix A

RADIUS Equivalency Application

Maxymillian Technologies, Inc. (18786) Date: 6/4/2009

New Jersey Department of Environmental Protection
Reason for Application

Permit Being Modified

Permit Class: **Number:** 0

Description of Modifications: Maxymillian has prepared the following air equivalency application for the construction of a low temperature thermal desorption (LTTD) unit and ancillary emission sources to treat contaminated soil at the Cornell Dubilier Electronics (CDE) Superfund site located in South Plainfield, New Jersey. Maxymillian is the owner and operator of the LTTD unit and ancillary equipment and thus is submitting this air equivalency package for these air emission sources. Since Maxymillian does not perform soil excavation activities, soil excavation activities at the site are excluded from the scope of this air equivalency package. Based on the results of a risk screening analysis, the potential emissions from the LTTD unit and associated air pollution control system are below the NJDEP thresholds for both long-term (annual) and short-term (hourly) risk.

Maxymillian requests that NJDEP process this air equivalency application on an expedited basis so that construction can commence as soon as possible. The installation of the LTTD unit and ancillary equipment will enable Maxymillian to commence soil treatment activities at the CDE facility. Maxymillian proposes to commence construction activities in July 2009 and commence operation in August 2009.

New Jersey Department of Environmental Protection
Facility Profile (General)

Facility Name (AIMS): Maxymillian Technologies, Inc. **Facility ID (AIMS):** 18786

Street Address: 333 HAMILTON BLVD
SOUTH PLAINFIELD, NJ 07080

Mailing Address: 1801 EAST ST
PITTSFIELD, MA 01201

State Plane Coordinates:
X-Coordinate:
Y-Coordinate:
Units:
Datum:
Source Org.:
Source Type:

County: Middlesex
Location Description:

Industry:
Primary SIC: 8711
Secondary SIC:
NAICS: 541330

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Air Permit Information Contact

Organization: Maxymillian Technologies, Inc.
Org. Type: Corporation
Name: John Anthony
NJ EIN:
Title: Senior Vice President
Phone: (413) 499-3050 x
Fax: (413) 443-0511 x
Other: ( ) - x
Type:
Email: janthony@maxymillian.com
Mailing Address: 1801 East Street
Pittsfield, MA 01201

Contact Type: Consultant

Organization: AECOM Inc.
Org. Type: Corporation
Name: Christopher Fleck
NJ EIN:
Title: Air Quality Engineer
Phone: (727) 577-5430 x
Fax: (727) 577-5892 x
Other: ( ) - x
Type:
Email: christopher.fleck@aecom.com
Mailing Address: 9418 International Court North
St. Petersburg, FL 33716

Contact Type: Responsible Official

Organization: Maxymillian Technologies, Inc.
Org. Type: Corporation
Name: John Anthony
NJ EIN:
Title: Senior Vice President
Phone: (413) 499-3050 x
Fax: (413) 443-0511 x
Other: ( ) - x
Type:
Email: janthony@maxymillian.com
Mailing Address: 1801 East Street
Pittsfield, MA 01201

New Jersey Department of Environmental Protection
Facility Profile (Permitting)

1. Is this facility classified as a small business by the USEPA?	No
2. Is this facility subject to N.J.A.C. 7:27-22?	No
3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22?	No
4. Has a copy of this application been sent to the USEPA?	No
5. If not, has the EPA waived the requirement?	No
6. Are you claiming any portion of this application to be confidential?	No
7. Is the facility an existing major facility?	No
8. Have you submitted a netting analysis?	No
9. Are emissions of any pollutant above the SOTA threshold?	Yes
10. Have you submitted a SOTA analysis?	Yes
11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required	
12. Have you provided, or are you planning to provide air contaminant modeling?	No

Maxymillian Technologies, Inc. (18786) Date: 6/4/2009

New Jersey Department of Environmental Protection
Equipment Inventory

Equip. NJID	Facility's Designation	Equipment Description	Equipment Type	Certificate Number	Install Date	Grand-Fathered	Last Mod. (Since 1968)	Equip. Set ID
E1	Soil Inlet	Soil Feed Equipment	Manufacturing and Materials Handling Equipment			No		
E2	LTTD Unit	LTTD Unit	Fuel Combustion Equipment (Other)			No		
E3	Soil Outlet	Soil Conveying System Exiting LTTD	Manufacturing and Materials Handling Equipment			No		
E4	WWT - Filter	Filter Press in WWT Operations	Manufacturing and Materials Handling Equipment			No		
E5	OWS	Oil-Water Separator in WWT Operations	Manufacturing and Materials Handling Equipment			No		

000000 E1 (Manufacturing and Materials Handling Equipment)
Print Date: 6/4/2009

Make:	Extec
Manufacturer:	Extec
Model:	6000S
Type of Manufacturing and Materials Handling Equipment:	Soil Handling Equipment
Capacity:	2.00E+01
Units:	other units
Description (if other):	ton/hr
Have you attached a diagram showing the location and/or the configuration of this equipment?	Yes
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	No
Comments:	

000000 E2 (Fuel Combustion Equipment (Other))
Print Date: 6/4/2009

Make:	North American 6" Flat Flame Burner
Manufacturer:	North American Burner
Model:	Special 4836-8-A/SG/32
Maximum rated Gross Heat Input (MMBtu/hr-HHV):	25.80
Type of Heat Exchange:	Indirect
Equipment Type Description:	Propane-Fired Rotary Drum Calciner

Have you attached a diagram showing the location and/or the configuration of this equipment?

- (●) Yes
- ( ) No

Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?

- ( ) Yes
- (●) No

Comments:

Include Emission Rates on the Potential to Emit Screen for each contaminant in ppmvd @ 7%O2 in addition to lbs/hr and tons/yr.

000000 E3 (Manufacturing and Materials Handling Equipment)
Print Date: 6/4/2009

Make:	
Manufacturer:	
Model:	
Type of Manufacturing and Materials Handling Equipment:	Soil Conveying Equipment
Capacity:	2.00E+01
Units:	other units
Description (if other):	ton/hr
Have you attached a diagram showing the location and/or the configuration of this equipment?	Yes
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	No
Comments:	

000000 E4 (Manufacturing and Materials Handling Equipment)
Print Date: 6/4/2009

Make:	Siemens 1000 MM
Manufacturer:	Siemens
Model:	1000 G32-66-55 SYLC
Type of Manufacturing and Materials Handling Equipment:	Filter Press in WWT Operations
Capacity:	6.50E+01
Units:	other units
Description (if other):	gallons per minute
Have you attached a diagram showing the location and/or the configuration of this equipment?	Yes
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	No
Comments:	

000000 E5 (Manufacturing and Materials Handling Equipment)
Print Date: 6/4/2009

Make:	IDS Oil-Water Separator
Manufacturer:	Maxymillian
Model:	IDS 50
Type of Manufacturing and Materials Handling Equipment:	Oil-Water Separator in WWT Operations
Capacity:	5.00E+01
Units:	other units
Description (if other):	gallons per minute
Have you attached a diagram showing the location and/or the configuration of this equipment?	Yes
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	No
Comments:	

Maxymillian Technologies, Inc. (18786) Date: 6/4/2009

New Jersey Department of Environmental Protection
Control Device Inventory

CD NJID	Facility's Designation	Description	CD Type	Install Date	Grand-Fathered	Last Mod. (Since 1968)	CD Set ID
CD1	Baghouse	Baghouse	Particulate Filter (Baghouse)		No		
CD2	Quench	Quench	Scrubber (Venturi)		No		
CD3	Condenser	Condenser	Condenser		No		
CD4	Pre-Filter	Pre-Filter Box (Lead & Standby)	Particulate Filter (Other)		No		
CD5	Coalescing	Coalescing Filter (Lead & Standby)	Particulate Filter (Other)		No		
CD6	HEPA 1	HEPA Filter 1 (Lead & Standby)	Particulate Filter (HEPA)		No		
CD7	Adsorber 1	Carbon Adsorbers	Adsorber		No		
CD8	Adsorber 2	Secondary Adsorber	Adsorber		No		
CD9	Adsorber 3	Tertiary Adsorber	Adsorber		No		
CD10	HEPA	HEPA Filter 2	Particulate Filter (HEPA)		No		
CD11	Burners	LTTD Burners	Oxidizer (Thermal)		No		
CD12	Adsorber 4	Carbon for WWT Building Air Handling Operations	Adsorber		No		

000000 CD1 (Particulate Filter (Baghouse))
Print Date: 6/4/2009

Make:	Custom
Manufacturer:	R.L. Flowers / Maxymillian Technologies
Model:	NA
Number of Bags:	90
Size of Bags (ft²):	5.27
Total Bag Area (ft²):	475.0
Bag Fabric:	FB-700
Fabric Weight (oz/ft²):	
Fabric Weave:	1/3 Twill
Fabric Finish:	
Maximum Design Temperature Capability (°F):	800.0
Maximum Design Air Flow Rate (acfm):	
Draft Type:	Induced
Maximum Air Flow Rate to Cloth Area Ratio:	
Minimum Operating Pressure Drop (in. H2O):	
Maximum Operating Pressure Drop (in. H2O):	
Method of Monitoring Pressure Drop:	Differential Pressure Gauge
Maximum Inlet Temperature (°F):	
Minimum Inlet Temperature (°F):	
Dew Point of Gas Stream Maximum Inlet Temperature (°F):	
Maximum Operating Exhuast Gas Flow Rate (acfm):	
Maximum Inlet Gas Stream Moisture Content (%):	
Method for Determining When Bag Replacement is Required:	Regular Inspection
Method for Determining When Cleaning is Required:	Differential Pressure
Method of Bag Cleaning:	Pulse Jet
Description:	
Is Bag Cleaning Conducted On-Line?	● Yes ◎ No
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached a Particle Size Distribution Analysis?	◎ Yes ● No

000000 CD1 (Particulate Filter (Baghouse))
Print Date: 6/4/2009

Have you attached data from recent performance testing?

● Yes ● No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?

● Yes ● No

Have you attached a diagram showing the location and/or configuration of this control apparatus?

● Yes ● No

Comments:

000000 CD2 (Scrubber (Venturi))
Print Date: 6/4/2009

Make:	Custom
Manufacturer:	Maxymillian Technologies
Model:	
Is the Scrubber Used for Particulate Control?	● Yes ○ No
Is the Scrubber Used for Gas Control?	● Yes ○ No
Is the Scrubber Equipped with a Mist Eliminator?	◉ Yes ● No
Minimum Pump Discharge Pressure (in. H20):	
Maximum Pump Discharge Pressure (in. H20):	
Method of Monitoring Pump Discharge Pressure:	
Minimum Pump Current (amps):	
Maximum Pump Current (amps):	
Method of Monitoring Pump Current:	
Minimum Scrubber Medium Inlet Pressure (in. H20):	
Minimum Operating Liquid Flow Rate (gpm):	100.00
Maximum Operating Liquid Flow Rate (gpm):	260.00
Method of Monitoring Liquid Flow Rate:	Flow Meter
Minimum Operating Gas Flow Rate (acfm):	
Maximum Operating Gas Flow Rate (acfm):	
Method of Monitoring Gas Flow Rate:	
Minimum Operating Pressure Drop (in. H20):	
Maximum Operating Pressure Drop (in. H20):	
Method of Monitoring Pressure Drop:	
Relative Direction of the Gas-Liquid Flow:	Co-Current
Description:	
Throat Length (in):	
Throat Diameter (in):	
Maximum Inlet Gas Temperature (°F):	
Maximum Outlet Gas Temperature (°F):	
Inlet Particle Grain Loading (gr/dscf):	
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	Monitor outlet gas temperature
Have you attached data from recent performance testing?	◉ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	◉ Yes ● No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	● Yes ○ No

Comments:

000000 CD3 (Condenser)
Print Date: 6/4/2009

Make:	Custom
Manufacturer:	Whitlock
Model:	44852
Condenser Type:	SH
Type of Material of Which Shell Is Constructed:	Steel
Type of Material of Which Tubes Are Constructed:	Copper
Minimum Gas Inlet Temperature (°F):	100.0
Maximum Gas Inlet Temperature (°F):	210.0
Heat Transfer (Contact) Surface Area (ft^2):	
Maximum Gas Flow (acfm):	
Minimum Cooling Medium Flow Rate (gpm):	
Maximum Cooling Medium Flow Rate (gpm):	
Minimum Heat Removal Capacity (BTU/hr):	
Liquid to Gas Flow Ratio for Optimal Efficiency:	
Minimum Cooling Medium Inlet Temperature (°F):	
Maximum Cooling Medium Inlet Temperature (°F):	
Minimum Cooling Medium Outlet Temperature (°F):	
Maximum Cooling Medium Outlet Temperature (°F):	
Minimum Gas Outlet Temperature (°F):	32.0
Maximum Gas Outlet Temperature (°F):	60.0
Minimum Condensate Outlet Temperature (°F):	
Maximum Condensate Outlet Temperature (°F):	
Type of Cooling Medium:	Glycol Mixed with Water
Use of Condensate:	
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	Monitor outlet gas temperature
Have you attached data from recent performance testing?	Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	Yes ● No

Have you attached a diagram showing the location and/or configuration of this control apparatus?

● Yes ◉ No

Comments: Condensate is sent to water treatment unit.

000000 CD4 (Particulate Filter (Other))
Print Date: 6/4/2009

Make:	Fiber Bond
Manufacturer:	Fiber Bond
Model:	Multi-Wedge 95
Filter Description:	Pre-Filter to Remove Oil Mist from Vapor Stream
Total Filter Area (ft^2):	12.00
Maximum Design Temperature Capability (°F):	200.0
Maximum Design Air Flow Rate (acfm):	
Maximum Air Flow Rate to Filter Area Ratio:	
Minimum Operating Pressure Drop (in. H2O):	
Maximum Operating Pressure Drop (in. H2O):	
Maximum Inlet Temperature (°F):	
Maximum Operating Exhuast Gas Flow Rate (acfm):	2,000.0
Method for Determining When Filter Replacement is Required:	Monitor face Pressure of Calciner
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached a Particle Size Distribution Analysis?	○ Yes ● No
Have you attached data from recent performance testing?	○ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	○ Yes ● No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	○ Yes ● No
Comments:	

000000 CD4 (Particulate Filter (Other))
Print Date: 6/4/2009

000000 CD5 (Particulate Filter (Other))
Print Date: 6/4/2009

Make:	Flexifiber
Manufacturer:	Koch-Glitsch
Model:	BD Brownian Diffusion
Filter Description:	Coalescing Filter to Remove Oil Mist from Vapor Stream
Total Filter Area (ft^2):	
Maximum Design Temperature Capability (°F):	
Maximum Design Air Flow Rate (acfm):	
Maximum Air Flow Rate to Filter Area Ratio:	
Minimum Operating Pressure Drop (in. H2O):	
Maximum Operating Pressure Drop (in. H2O):	
Maximum Inlet Temperature (°F):	
Maximum Operating Exhuast Gas Flow Rate (acfm):	
Method for Determining When Filter Replacement is Required:	Monitor face Pressure of Calciner
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached a Particle Size Distribution Analysis?	○ Yes ● No
Have you attached data from recent performance testing?	○ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	○ Yes ● No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	○ Yes ● No
Comments:	

000000 CD5 (Particulate Filter (Other))
Print Date: 6/4/2009

000000 CD6 (Particulate Filter (HEPA))
Print Date: 6/4/2009

Make:	
Manufacturer:	
Model:	
Filter Description:	HEPA Filter to Remove Oil Mist from Vapor Stream
Total Filter Area (ft^2):	
Maximum Design Temperature Capability (°F):	
Maximum Design Air Flow Rate (acfm):	
Maximum Air Flow Rate to Filter Area Ratio:	
Minimum Operating Pressure Drop (in. H2O):	
Maximum Operating Pressure Drop (in. H2O):	
Maximum Inlet Temperature (°F):	
Maximum Operating Exhuast Gas Flow Rate (acfm):	
Method for Determining When Filter Replacement is Required:	Monitor Face Pressure of Calciner
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached a Particle Size Distribution Analysis?	○ Yes ● No
Have you attached data from recent performance testing?	○ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	○ Yes ● No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	○ Yes ● No

Comments:

000000 CD6 (Particulate Filter (HEPA))
Print Date: 6/4/2009

000000 CD7 (Adsorber)
Print Date: 6/4/2009

Make:	Service Tech
Manufacturer:	ST-1
Model:	VP-100
Adsorber Type:	FN
Description:	
Maximum Gas Flow Rate to Adsorber (acfm):	500.0
Maximum Temperature of Vapor Stream to Adsorber (°F):	100.00
Minimum Temperature of Vapor Stream to Adsorber (°F):	40.00
Minimum Moisture Content of Vapor Stream to Adsorber (%):	
Type of Adsorbant:	Activated Carbon
Bed Height:	
Bed Length:	
Bed Width:	
Units:	
Other Bed Dimension:	
Value:	
Units:	
Minimum Pressure Drop Across Adsorbant (in. H20):	
Maximum Pressure Drop Across Adsorber (in. H20):	
Total Weight of Adsorbant (lbs):	1000.0
Total Weight of Adsorbant When Saturated (lbs):	1200.0
Maximum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Minimum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Set-up Type:	Series

Method of Determining Breakthrough (check all that apply):

Continuous Emissions Monitor (CEM):	☐
Replacement By Weight:	☐
Periodic Testing:	☐
Sampling Frequency:	
Sampling Device:	
Other:	☑
Description:	*Changeout at 10,000 tons of soil processed.*
Minimum Concentration at Breakthrough (ppmvd):	
Handling Method of Saturated Adsorbant:	Disposed of off-site
Method of Regeneration:	

000000 CD7 (Adsorber)
Print Date: 6/4/2009

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources): 1

Alternative Method to Demonstrate Control Apparatus is Operating Properly:

Have you attached data from recent performance testing? ◯ Yes ◯ No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus? ◯ Yes ◯ No

Have you attached a diagram showing the location and/or configuration of this control apparatus? ◯ Yes ◯ No

Comments:

000000 CD8 (Adsorber)
Print Date: 6/4/2009

Make:	Service Tech
Manufacturer:	ST-1
Model:	VP-100
Adsorber Type:	FN
Description:	
Maximum Gas Flow Rate to Adsorber (acfm):	500.0
Maximum Temperature of Vapor Stream to Adsorber (°F):	100.00
Minimum Temperature of Vapor Stream to Adsorber (°F):	40.00
Minimum Moisture Content of Vapor Stream to Adsorber (%):	
Type of Adsorbant:	Activated Carbon
Bed Height:	
Bed Length:	
Bed Width:	
Units:	
Other Bed Dimension:	
Value:	
Units:	
Minimum Pressure Drop Across Adsorbant (in. H20):	
Maximum Pressure Drop Across Adsorber (in. H20):	
Total Weight of Adsorbant (lbs):	1000.0
Total Weight of Adsorbant When Saturated (lbs):	1200.0
Maximum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Minimum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Set-up Type:	Series

Method of Determining Breakthrough (check all that apply):

Continuous Emissions Monitor (CEM):	☐
Replacement By Weight:	☐
Periodic Testing:	☐
Sampling Frequency:	
Sampling Device:	
Other:	☑
Description:	Changeout at 10,000 tons of soil processed.
Minimum Concentration at Breakthrough (ppmvd):	
Handling Method of Saturated Adsorbant:	Disposed of off-site
Method of Regeneration:	

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources): 1

Alternative Method to Demonstrate Control Apparatus is Operating Properly:

Have you attached data from recent performance testing? ◉ Yes ○ No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus? ◉ Yes ○ No

Have you attached a diagram showing the location and/or configuration of this control apparatus? ◉ Yes ○ No

Comments:

000000 CD9 (Adsorber)
Print Date: 6/4/2009

Make:	Service Tech
Manufacturer:	ST-1
Model:	VP-100
Adsorber Type:	FN
Description:	
Maximum Gas Flow Rate to Adsorber (acfm):	500.0
Maximum Temperature of Vapor Stream to Adsorber (°F):	100.00
Minimum Temperature of Vapor Stream to Adsorber (°F):	40.00
Minimum Moisture Content of Vapor Stream to Adsorber (%):	
Type of Adsorbant:	Activated Carbon
Bed Height:	
Bed Length:	
Bed Width:	
Units:	
Other Bed Dimension:	
Value:	
Units:	
Minimum Pressure Drop Across Adsorbant (in. H20):	
Maximum Pressure Drop Across Adsorber (in. H20):	
Total Weight of Adsorbant (lbs):	1000.0
Total Weight of Adsorbant When Saturated (lbs):	1200.0
Maximum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Minimum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Set-up Type:	Series

Method of Determining Breakthrough (check all that apply):

Continuous Emissions Monitor (CEM):	☐
Replacement By Weight:	☐
Periodic Testing:	☐
Sampling Frequency:	
Sampling Device:	
Other:	☑
Description:	Changeout at 10,000 tons of soil processed.
Minimum Concentration at Breakthrough (ppmvd):	
Handling Method of Saturated Adsorbant:	Disposed of off-site
Method of Regeneration:	

000000 CD9 (Adsorber)
Print Date: 6/4/2009

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources): 1

Alternative Method to Demonstrate Control Apparatus is Operating Properly:

Have you attached data from recent performance testing? (●) Yes ( ) No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus? (●) Yes ( ) No

Have you attached a diagram showing the location and/or configuration of this control apparatus? (●) Yes ( ) No

Comments:

000000 CD10 (Particulate Filter (HEPA))
Print Date: 6/4/2009

Make:	Ultra Pac
Manufacturer:	Camfill Farr
Model:	GGEA-1000-01
Filter Description:	HEPA Filter to Keep Carbon from Adsorbers from Reaching LTTD Burners
Total Filter Area (ft^2):	169.00
Maximum Design Temperature Capability (°F):	160.0
Maximum Design Air Flow Rate (acfm):	1,040.0
Maximum Air Flow Rate to Filter Area Ratio:	
Minimum Operating Pressure Drop (in. H2O):	0.01
Maximum Operating Pressure Drop (in. H2O):	1.00
Maximum Inlet Temperature (°F):	
Maximum Operating Exhuast Gas Flow Rate (acfm):	
Method for Determining When Filter Replacement is Required:	Monitor Face Pressure of Calciner
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached a Particle Size Distribution Analysis?	(●) Yes ( ) No
Have you attached data from recent performance testing?	(●) Yes ( ) No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	(●) Yes ( ) No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	(●) Yes ( ) No
Comments:	

000000 CD10 (Particulate Filter (HEPA))
Print Date: 6/4/2009

000000 CD11 (Oxidizer (Thermal))
Print Date: 6/4/2009

Make:	Valcon
Manufacturer:	Valcon
Model:	5' x 48' Indirect Fired Rotary Calciner
Minimum Chamber Temperature (°F):	
Minimum Residence Time (sec):	
Fuel Type:	Propane
Description:	
Maximum Rated Gross Heat Input (MMBtu/hr):	26.00
Maximum Number of Sources Using this Apparatus as a Control Device (*Include Permitted and* Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached data from recent performance testing?	○ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	● Yes ○ No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	○ Yes ● No
Comments:	Post-control vapor stream is fed into LTTD combustion zone for polishing prior to discharge to atmosphere

000000 CD12 (Adsorber)
Print Date: 6/4/2009

Make:	
Manufacturer:	
Model:	
Adsorber Type:	FR
Description:	
Maximum Gas Flow Rate to Adsorber (acfm):	500.0
Maximum Temperature of Vapor Stream to Adsorber (°F):	
Minimum Temperature of Vapor Stream to Adsorber (°F):	
Minimum Moisture Content of Vapor Stream to Adsorber (%):	
Type of Adsorbant:	Activated Carbon for WWT Building Air Handling System
Bed Height:	
Bed Length:	
Bed Width:	
Units:	
Other Bed Dimension:	
Value:	
Units:	
Minimum Pressure Drop Across Adsorbant (in. H20):	
Maximum Pressure Drop Across Adsorber (in. H20):	
Total Weight of Adsorbant (lbs):	
Total Weight of Adsorbant When Saturated (lbs):	
Maximum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Minimum Adsorbant Capacity (lbs Adsorbate/lbs Adsorbant):	
Set-up Type:	

Method of Determining Breakthrough (check all that apply):

Continuous Emissions Monitor (CEM):	☐
Replacement By Weight:	☐
Periodic Testing:	☐
Sampling Frequency:	
Sampling Device:	
Other:	☐
Description:	
Minimum Concentration at Breakthrough (ppmvd):	
Handling Method of Saturated Adsorbant:	
Method of Regeneration:	

000000 CD12 (Adsorber)
Print Date: 6/4/2009

Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources): 1

Alternative Method to Demonstrate Control Apparatus is Operating Properly:

Have you attached data from recent performance testing? (●) Yes ( ) No

Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus? (●) Yes ( ) No

Have you attached a diagram showing the location and/or configuration of this control apparatus? (●) Yes ( ) No

Comments:

Maxymillian Technologies, Inc. (18786)

Date: 6/4/2009

New Jersey Department of Environmental Protection
Emission Points Inventory

PT NJID	Facility's Designation	Description	Config.	Equiv. Diam. (in.)	Height (ft.)	Dist. to Prop. Line (ft)	Exhaust Temp. (deg. F)			Exhaust Vol. (acfm)			Discharge Direction	PT Set ID
							Avg.	Min.	Max.	Avg.	Min.	Max.		
PT1	Soil Inlet	Soil Handling Builidng Exhaust	Round	12	15	200	60.0	40.0	80.0	2,000.0	1,500.0	2,200.0	Up	
PT2	LTTD Exh. #1	LTTD Exhaust Point #1	Round	28	20	200	500.0	200.0	800.0	5,900.0	5,000.0	7,000.0	Up	
PT3	LTTD Exh. #2	LTTD Exhaust Point #2	Round	28	20	200	500.0	200.0	800.0	5,900.0	5,000.0	7,000.0	Up	
PT4	LTTD Exh. #3	LTTD Exhaust Point #3	Round	28	20	200	500.0	200.0	800.0	5,900.0	5,000.0	7,000.0	Up	
PT5	Soil Outlet	Outlet Soil Conveyor Exhaust Point	Surface	12	15	200	60.0	40.0	80.0	6.0	0.0	6.0	Up	
PT6	WWT Builidng	Wastewater Treatment Building Exhaust	Round	6	20	230	60.0	40.0	80.0	500.0	400.0	575.0	Up	

Maxymillian Technologies, Inc. (18786)

Date: 6/4/2009

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 1 Soil Treat Soil Treatment System

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Min.	Annual Oper. Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	Soil	Soil Feed Conveying System	Normal - Steady State	E1		PT1		0.0	8,760.0		1,500.0	2,200.0	40.0	80.0
OS2	Burner/LTTD	Calciner with LTTD	Normal - Steady State	E2	CD1 (P) CD10 (T) CD11 (T) CD2 (S) CD3 (T) CD4 (T) CD5 (T) CD6 (T) CD7 (T) CD8 (T) CD9 (T)	PT2 PT3 PT4		0.0	8,760.0		15,000.0	21,000.0	500.0	1,000.0
OS3	Outlet Soil	Soil Conveying System Exiting LTTD	Normal - Steady State	E3		PT5		0.0	8,760.0		0.0	6.0	40.0	80.0
OS4	WWT - Filter	WWT - Filter Press	Normal - Steady State	E4	CD12 (P)	PT6		0.0	8,760.0		400.0	575.0	40.0	80.0
OS5	WWT - OWS	WWT - Oil-Water Separator	Normal - Steady State	E5	CD12 (P)	PT6		0.0	8,760.0		400.0	575.0	40.0	80.0

000000 U1 OS1 (Gas Flow)
Print Date: 6/4/2009

Volume of Gas Discharged from this source (acfm):	2,200.00

000000 U1 OS1 (Raw Materials)
Print Date: 6/4/2009

Raw Material	CAS Number	Physical State	Molecular Weight (lbs/lbs-mole)	Does the Material Contain VOC?	Weight Fraction (%)	Vapor Pressure @ 70 deg F (mmHg)	Organic Density	Units
Contaminated Soil		Solid		Yes				lb/ft^3

000000 U1 OS2 (Fuel Information Table)
Print Date: 6/4/2009

Is this fuel a blend?	(•) Yes ( ) No
Fuel Category:	Commercial
Fuel Type:	Liquid petroleum gas (Propane)
Description (if other):	
Amount of Sulfur in Fuel (%):	
Amount of Ash in Fuel (%):	
Fuel Heating Value:	90,500.00
Units:	BTU/gal
Estimated Maximum Amount of Fuel Burned Annually:	2,470,033.00
Units:	gal/yr
Estimated Actual Amount of Fuel Burned Annually:	
Units:	
Amount of Oxygen in Flue Gas (%):	
Amount of Moisture in Flue Gas (%):	
Comments:	

000000 U1 OS3 (Gas Flow)
Print Date: 6/4/2009

Volume of Gas Discharged from this source (acfm):	6.00

000000 U1 OS3 (Raw Materials)
Print Date: 6/4/2009

Raw Material	CAS Number	Physical State	Molecular Weight (lbs/lbs-mole)	Does the Material Contain VOC?	Weight Fraction (%)	Vapor Pressure @ 70 deg F (mmHg)	Organic Density	Units
Soil		Solid						

000000 U1 OS4 (Gas Flow)
Print Date: 6/4/2009

Volume of Gas Discharged from this source (acfm):	575.00

000000 U1 OS4 (Raw Materials)
Print Date: 6/4/2009

Raw Material	CAS Number	Physical State	Molecular Weight (lbs/lbs-mole)	Does the Material Contain VOC?	Weight Fraction (%)	Vapor Pressure @ 70 deg F (mmHg)	Organic Density	Units
Filter Press Solids		Solid		Yes				lb/ft^3
Wastewater		Liquid		Yes				lb/gal

000000 U1 OS5 (Gas Flow)
Print Date: 6/4/2009

Volume of Gas Discharged from this source (acfm):	575.00

000000 U1 OS5 (Raw Materials)
Print Date: 6/4/2009

Raw Material	CAS Number	Physical State	Molecular Weight (lbs/lbs-mole)	Does the Material Contain VOC?	Weight Fraction (%)	Vapor Pressure @ 70 deg F (mmHg)	Organic Density	Units
Wastewater		Liquid		Yes				lb/gal

Maxymillian Technologies, Inc. (18786) Date: 6/4/2009

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: U1 Soil Treat

Operating Scenario: OS0 Summary

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO			16.95000000	16.95000000	tons/yr	No
HAPs (Total)			D	D	tons/yr	No
NOx (Total)			12.43000000	12.43000000	tons/yr	No
Pb			D	D	tons/yr	No
PM-10 (Total)			0.87000000	0.87000000	tons/yr	No
SO2			1.87000000	1.87000000	tons/yr	No
TSP			0.87000000	0.87000000	tons/yr	No
VOC (Total)			1.24000000	1.24000000	tons/yr	No

Subject Item: U1 Soil Treat

Operating Scenario: OS1

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
PM-10 (Total)			D	D	lb/hr	No
TSP			D	D	lb/hr	No

Subject Item: U1 Soil Treat

Operating Scenario: OS2

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO			3.87000000	3.87000000	lb/hr	No
HAPs (Total)			D	D	lb/hr	No

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: U1 Soil Treat

Operating Scenario: OS2

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
NOx (Total)			2.84000000	2.84000000	lb/hr	No
Pb			D	D	lb/hr	No
PM-10 (Total)			0.20000000	0.20000000	lb/hr	No
SO2			0.43000000	0.43000000	lb/hr	No
TSP			0.20000000	0.20000000	lb/hr	No
VOC (Total)			0.28000000	0.28000000	lb/hr	No

Subject Item: U1 Soil Treat

Operating Scenario: OS3

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
PM-10 (Total)			D	D	lb/hr	No
TSP			D	D	lb/hr	No

Subject Item: U1 Soil Treat

Operating Scenario: OS4

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
HAPs (Total)			D	D	lb/hr	No
VOC (Total)			D	D	lb/hr	No

Maxymillian Technologies, Inc. (18786) Date: 6/4/2009

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: U1 Soil Treat

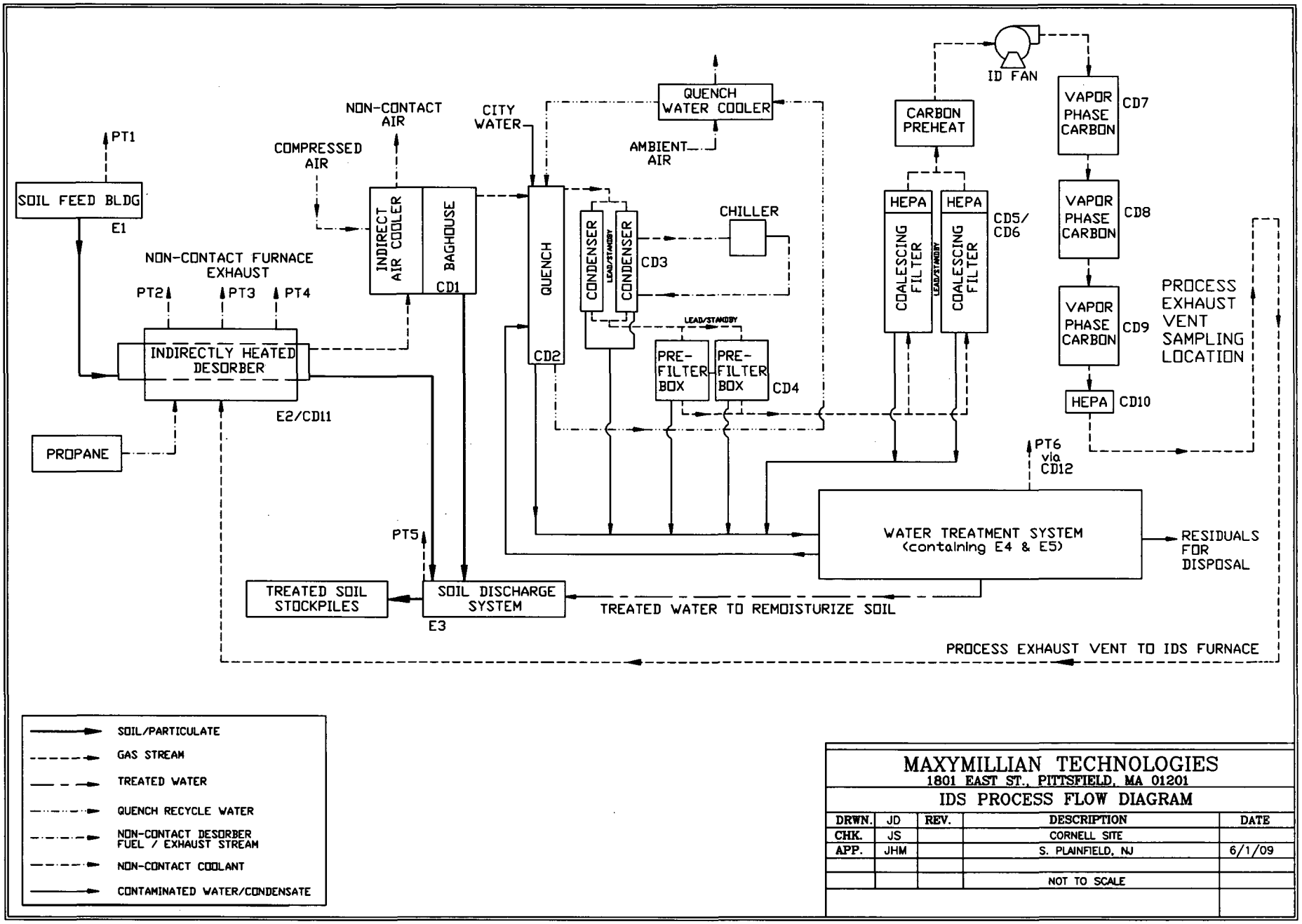
Operating Scenario: OS5

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
HAPs (Total)			D	D	lb/hr	No
VOC (Total)			D	D	lb/hr	No

Appendix B

Process Flow Diagrams

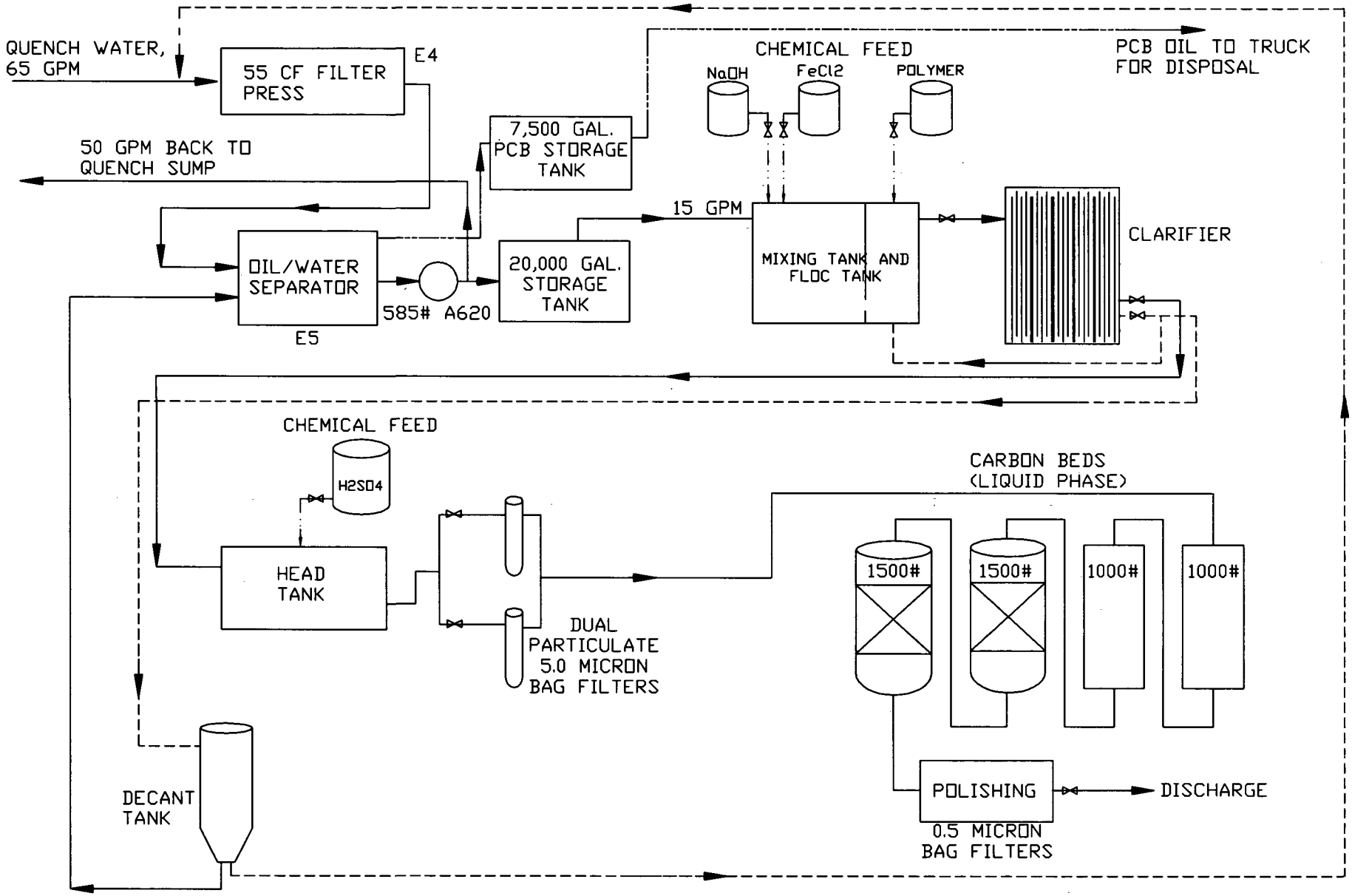


MAXYMILLIAN TECHNOLOGIES

1801 EAST ST., PITTSFIELD, MA 01201

IDS PROCESS FLOW DIAGRAM

DRWN.	JD	REV.	DESCRIPTION	DATE
CHK.	JS		CORNELL SITE	
APP.	JHM		S. PLAINFIELD, NJ	6/1/09
			NOT TO SCALE	



NOTE: Wastewater Treatment System equipment located inside a building. Potential emissions vented to atmosphere via building exhaust fan (PT6), after passing through a carbon adsorption unit (CD12).

——— Liquids
- - - - - - - Sludge
—·—·—·— Chemical Feed
———— PCB Oil

MAXYMILLIAN TECHNOLOGIES
1801 EAST ST., PITTSFIELD, MA 01201

SERIES IIIA PROCESS FLOW DIAGRAM

DRWN.	WPL	REV.	DESCRIPTION	DATE
CHK.	JD		CORNELL SITE	
APP.	JHM		S. PLAINFIELD, NJ	6/1/09
			NOT TO SCALE	

Appendix C

Emission Calculations Including Air Toxics Risk Screening Analysis

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
Soil Handling Equipment - Particulate Emission Estimates

PM_{10} Emission Estimates

Unit	Unit Description	Process Rate (ton/hr)	Process Rate (ton/yr)	Uncontrolled Emission Factor (lb/ton)	Particle Size Multiplier	Mean Wind Speed (mph)	Material Moisture Content (%)	Control Efficiency (%)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Soil Handling - Inlet										
E1	LTTD Feed Hopper	20	157,680	2.97E-04	0.35	10.2	10.0	70	1.8E-03	7.0E-03
E1	LTTD Screening Unit	20	157,680	7.40E-04	0.35	10.2	10.0	70	4.4E-03	1.8E-02
E1	LTTD Feed Conveyor	20	157,680	2.97E-04	0.35	10.2	10.0	70	1.8E-03	7.0E-03
Soil Handling - Outlet										
E3	Soil Conveying System Exiting LTTD (to Storage Pile)	20	157,680	7.85E-04	0.35	10.2	5.0	0	0.02	6.2E-02

Notes:

Particulate emission estimates are based on the emission calculation methodology specified in AP-42 Chapter 13.2.4.

The particulate emission factors for screening operations (0.0022 lb/ton for TSP and 0.00074 lb/ton for PM10) were referenced from AP-42 Chapter 11.19.2, Table 11.19.2-2. The controlled emission factors were selected due to high moisture content of the feed soil.

The particle size multiplier value of 0.35 for PM10 and 0.74 for TSP is based on information from AP-42 Chapter 13.2.4.
The mean wind speed value of 10.2 miles per hour was obtained from historical wind speed data from Newark, NJ maintained on the NOAA website.
The material moisture content for LTTD pre-feed soil is based on the soil specifications for Sevenson Environmental Services.
The material moisture content for LTTD outlet soil is based on engineering judgment.
The control efficiency values for LTTD pre-feed soil are based on engineering judgment due to the location of these units within a building.

From AP-42, Chapter 13.2.4 - Aggregate Handling & Storage Piles

$$EF\ (lb/ton) = k * (0.0032) * [((u/5)^{1.3}) / ((M/2)^{1.4})]$$

where, EF = Emission Factor
k = Particle Size Multiplier (dimensionless)
U = Mean Wind Speed, [mph]
M = Material Moisture Content (%)

Sample Calculation: Batch Drop to LTTD Feed Hopper

k =	0.35	for PM10	
Mean Wind Speed =	10.2	mph	(estimated)
Material Moisture Content =	10.0	%	(based on pre-feed soil specifications)
Control Efficiency (Wet Suppression) =	70	%	

EF = 2.97E-04 lb/ton PM10
Maximum Hourly Soil Feed Rate = 20 ton/hr — E = **0.00 lb/hr PM10**
Maximum Annual Throughput = 157,680 ton/yr — E = **0.01 TPY**

TSP Emission Estimates

Unit	Unit Description	Process Rate (ton/hr)	Process Rate (ton/yr)	Uncontrolled Emission Factor (lb/ton)	Particle Size Multiplier	Mean Wind Speed (mph)	Material Moisture Content (%)	Control Efficiency (%)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Soil Handling - Inlet										
E1	LTTD Feed Hopper	20	157,680	6.29E-04	0.74	10.2	10.0	70	0.00	0.01
E1	LTTD Screening Unit	20	157,680	2.20E-03	0.74	10.2	10.0	70	0.01	0.05
E1	LTTD Feed Conveyor	20	157,680	6.29E-04	0.74	10.2	10.0	70	0.00	0.01
Soil Handling - Outlet										
E3	Soil Conveying System Exiting LTTD (to Storage Pile)	20	157,680	1.66E-03	0.74	10.2	5.0	0	0.03	0.13

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
LTTD - Combustion Emission Estimates

LTTD Operating Parameters

Permitted Capacity for LTTD:	25.8 MMBtu/hr
Maximum Operating Hours:	8760 hr/yr
Heat Capacity of Propane:	91,500 Btu/gal
Sulfur Content of Propane:	15 gr/ 100 scf
Max. Annual Fuel Consumption:	2,470,033 gal/yr

	NO_x	CO	VOC	TSP	PM_{10}	SO_2	Lead
Emission Factor (lb/MMBtu) [1]	0.11	0.15					
Emission Factor (lb/Mgal) [2,3]			1.0	0.7	0.7	1.5	
Short-Term Emissions (lb/hr)	2.84	3.87	0.28	0.20	0.20	0.42	
Potential Emissions, Total (TPY)	**12.43**	**16.95**	**1.24**	**0.86**	**0.86**	**1.85**	

Note:

1. Emission factor for NOx and CO based on emission factors provided by equipment vendor (Fives North American Combustion, Inc).
   The NOx emission factor is equivalent to 89 ppmvd NOx corrected to 3% O2 dry basis.
   The CO emission factor is equivalent to 200 ppmvd CO corrected to 3% O2 dry basis.
2. Pollutant emission factors were referenced from AP-42, Fifth Edition, Section 1.5 (July 2008).
3. The standard sulfur content of propane was estimated at 15 gr / 100 scf.

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
Air Toxics Risk Screening Analysis for LTTD

Stack Parameters

Stack Height:	20 feet
Distance to Property Line:	200 feet

LTTD System Parameters

Max. Short-Term Soil Feed Rate:	20 ton/hr
Annual Average Soil Feed Rate:	18 ton/hr
Max. Annual Soil Feed Rate:	157,680 ton/yr
Metal Extraction:	20%

LTTD Air Pollution Control Efficiencies

VOC:	99.5%
Volatile HAPs:	99.981%
Metals / Metal HAPs:	99.999%
Dieldrin:	99.981%
PCBs:	99.9999%
Lead:	99.999%

Risk Screening Results

	Long-Term Cancer Risk	Long-Term Hazard Index	Short-Term Hazard Index
Results	**0.0E+00**	**0.0000**	**0.000**
Risk	**Negligible Risk**	**Negligible Risk**	**Negligible Risk**

Notes:

1) Based on the thresholds established in NJDEP's *Technical Manual 1003 (Guidance on Preparing a Risk Assessment for Air Contaminant Emissions),* the "negligible" threshold associated with long-term cancer risk is one in a million.

2) Based on the thresholds established in NJDEP's *Technical Manual 1003 (Guidance on Preparing a Risk Assessment for Air Contaminant Emissions),* the "negligible" threshold for long-term and short-term hazard indices is one.

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
Air Toxics Risk Screening Analysis for LTTD
Soil Sampling Results

			Soil Sampling Data				Uncontrolled Emission Rates		Controlled Emission Rates				NJDEP Reporting Thresholds				Values Used in Risk Screening Analysis	
CAS No.	Chemical	Pollutant Type (VOC, HAP or Metal)	Sample ID for Maximum Concentration	Maximum Concentration (ppm, ug/kg)	Average Concentration (ppm, ug/kg)	Extraction (%)	Short-Term (lb/hr)	Annual (ton/yr)	Control Efficiency (%)	Short-Term (lb/hr)	Annual (ton/yr)	Annual (lb/yr)	Short-Term (lb/hr)	Threshold Exceeded?	Annual (lb/yr)	Threshold Exceeded?	Short-Term (lb/hr)	Annual (ton/yr)
67641	Acetone	VOC	CD-SB-8	1.70	0.58	100%	6.8E-02	9.2E-02	99.50%	3.4E-04	4.6E-04	0.92	0.05	No		No	0.0E+00	0.0E+00
98862	Acetophenone	HAP	MW06	0.76	0.29	100%	3.0E-02	4.6E-02	99.981%	5.8E-06	8.7E-06	0.017		No	200	No	0.0E+00	0.0E+00
309002	Aldrin	VOC	MW05	130.00	17.58	100%	5.2E+00	2.8E+00	99.50%	2.6E-02	1.4E-02	28	0.05	No		No	0.0E+00	0.0E+00
	Barium	Metal	MW05	4,170.00	455.11	20%	3.3E+01	1.4E+01	99.999%	3.3E-04	1.4E-04	0.29		No	2	No	0.0E+00	0.0E+00
71432	Benzene	HAP	CD-SB-14	5.30	1.42	100%	2.1E-01	2.2E-01	99.981%	4.0E-05	4.2E-05	0.085	0.01	No		No	0.0E+00	0.0E+00
50328	Benzo(a)pyrene	HAP	SS09	520.00	32.38	100%	2.1E+01	5.1E+00	99.981%	4.0E-03	9.7E-04	1.9		No	2	No	0.0E+00	0.0E+00
	Beryllium	Metal	CD-SB-15	10.79	1.15	20%	8.6E-02	3.6E-02	99.999%	8.6E-07	3.6E-07	0.00072		No	1.6	No	0.0E+00	0.0E+00
111444	Bis(2-chloroethyl)ether	VOC	CD-SB-29	2.00	1.39	100%	8.0E-02	2.2E-01	99.50%	4.0E-04	1.1E-03	2.2		No	12	No	0.0E+00	0.0E+00
117817	Bis(2-ethylhexyl)phthalate	HAP	CD-SB-38	1.00	0.25	100%	4.0E-02	4.0E-02	99.981%	7.6E-06	7.5E-06	0.015		No	1000	No	0.0E+00	0.0E+00
	Cadmium	Metal	BSB02	162.00	13.96	20%	1.3E+00	4.4E-01	99.999%	1.3E-05	4.4E-06	0.009		No	2	No	0.0E+00	0.0E+00
75150	Carbon disulfide	HAP	TP03	0.03	0.01	100%	1.3E-03	2.1E-03	99.981%	2.4E-07	4.0E-07	0.0008		No	200	No	0.0E+00	0.0E+00
108907	Chlorobenzene	HAP	CD-SB-14	4.30	1.80	100%	1.7E-01	2.8E-01	99.981%	3.3E-05	5.4E-05	0.11		No	2000	No	0.0E+00	0.0E+00
67663	Chloroform	HAP	BSB27	0.00	0.00	100%	1.2E-04	3.9E-04	99.981%	2.3E-08	7.5E-08	0.00015	0.01	No		No	0.0E+00	0.0E+00
	Cobalt	Metal	CD-SB-15	110.32	16.03	20%	8.8E-01	5.1E-01	99.999%	8.8E-06	5.1E-06	0.010		No	20	No	0.0E+00	0.0E+00
	Copper	Metal	CD-SB-15	9,071.00	424.39	20%	7.3E+01	1.3E+01	99.999%	7.3E-04	1.3E-04	0.27		No	2	No	0.0E+00	0.0E+00
110827	Cyclohexane	VOC	CD-SB-14	1.70	0.74	100%	6.8E-02	1.2E-01	99.50%	3.4E-04	5.8E-04	1.2	0.05	No		No	0.0E+00	0.0E+00
50293	DDT	VOC	CD-SB-4	73.00	10.55	100%	2.9E+00	1.7E+00	99.50%	1.5E-02	8.3E-03	17	0.05	No		No	0.0E+00	0.0E+00
117817	Di(2-ethylhexyl)phthalate	VOC	BSB76	1.60	0.27	100%	6.4E-02	4.3E-02	99.50%	3.2E-04	2.1E-04	0.43		No	1000	No	0.0E+00	0.0E+00
96128	Dibromo-3-chloropropane (1,2-)	HAP	CD-SB-14	0.02	0.01	100%	7.2E-04	1.4E-03	99.981%	1.4E-07	2.7E-07	0.00054		No	2	No	0.0E+00	0.0E+00
106934	Dibromoethane (1,2-)	VOC	CD-SB-14	0.02	0.01	100%	7.2E-04	1.3E-03	99.50%	3.6E-06	6.7E-06	0.013		No	20	No	0.0E+00	0.0E+00
95501	Dichlorobenzene (1,2-)	VOC	MW11	0.58	0.12	100%	2.3E-02	2.0E-02	99.50%	1.2E-04	9.8E-05	0.20		No	600	No	0.0E+00	0.0E+00
106467	Dichlorobenzene (1,4-)	HAP	MW11	1.10	0.24	100%	4.4E-02	3.8E-02	99.981%	8.4E-06	7.3E-06	0.015		No	600	No	0.0E+00	0.0E+00
91941	Dichlorobenzidine (3,3'-)	HAP	CD-SB-38	0.85	0.85	100%	3.4E-02	1.3E-01	99.981%	6.5E-06	2.5E-05	0.051		No	40	No	0.0E+00	0.0E+00
75343	Dichloroethane (1,1-)	VOC	MW11	0.01	0.01	100%	2.4E-04	9.5E-04	99.50%	1.2E-06	4.7E-06	0.009		No	200	No	0.0E+00	0.0E+00
75354	Dichloroethylene (1,1-)	VOC	CD-SB-6	4.00	0.90	100%	1.6E-01	1.4E-01	99.50%	8.0E-04	7.1E-04	1.4		No	80	No	0.0E+00	0.0E+00
75092	Dichloromethane	VOC	MW11	0.02	0.01	100%	7.6E-04	1.1E-03	99.50%	3.8E-06	5.5E-06	0.011		No	2000	No	0.0E+00	0.0E+00
78875	Dichloropropane (1,2-)	VOC	CD-SB-6	0.50	0.30	100%	2.0E-02	4.7E-02	99.50%	1.0E-04	2.3E-04	0.47		No	200	No	0.0E+00	0.0E+00
60571	Dieldrin	VOC	MW05	520.00	33.78	100%	2.1E+01	5.3E+00	99.981%	4.0E-03	1.0E-03	2.0	0.05	No		No	0.0E+00	0.0E+00
121142	Dinitrotoluene (2,4-)	HAP	CD-SB-30	1.30	1.30	100%	5.2E-02	2.0E-01	99.981%	9.9E-06	3.9E-05	0.078		No	4	No	0.0E+00	0.0E+00
100414	Ethylbenzene	HAP	CD-SB-47	0.36	0.09	100%	1.4E-02	1.4E-02	99.981%	2.7E-06	2.7E-06	0.0054		No	2000	No	0.0E+00	0.0E+00
106934	Ethylene dibromide	HAP	CD-SB-6	0.02	0.02	100%	7.2E-04	2.8E-03	99.981%	1.4E-07	5.4E-07	0.0011	0.01	No	20	No	0.0E+00	0.0E+00
75343	Ethylidene dichloride	HAP	MW11	0.01	0.01	100%	2.4E-04	9.5E-04	99.981%	4.6E-08	1.8E-07	0.0004		No	200	No	0.0E+00	0.0E+00
76448	Heptachlor	HAP	BSB24	32.00	3.03	100%	1.3E+00	4.8E-01	99.981%	2.4E-04	9.1E-05	0.18		No	4	No	0.0E+00	0.0E+00
1024573	Heptachlor epoxide	VOC	MW05	100.00	9.50	100%	4.0E+00	1.5E+00	99.50%	0.02	7.5E-03	15	0.05	No		No	0.0E+00	0.0E+00
118741	Hexachlorobenzene	HAP	CD-SB-39	0.04	0.04	100%	1.8E-03	6.9E-03	99.981%	3.3E-07	1.3E-06	0.0026		No	2	No	0.0E+00	0.0E+00
319846	Hexachlorocyclohexane (alpha-)	HAP	CD-SB-39	4.60	1.01	100%	1.8E-01	1.6E-01	99.981%	3.5E-05	3.0E-05	0.061		No	2	No	0.0E+00	0.0E+00
319857	Hexachlorocyclohexane (beta-)	HAP	CD-SB-39	23.00	1.87	100%	9.2E-01	2.9E-01	99.981%	1.7E-04	5.6E-05	0.11		No	2	No	0.0E+00	0.0E+00
58899	Hexachlorocyclohexane (gamma-)	HAP	CD-SB-48	1.20	0.38	100%	4.8E-02	5.9E-02	99.981%	9.1E-06	1.1E-05	0.023		No	2	No	0.0E+00	0.0E+00
	Lead	Metal	CD-SB-29	7,460.00	1,047.60	20%	6.0E+01	3.3E+01	99.999%	6.0E-04	3.3E-04	0.66		No	2	No	0.0E+00	0.0E+00
58899	Lindane	VOC	CD-SB-48	1.20	0.38	100%	4.8E-02	5.9E-02	99.50%	2.4E-04	3.0E-04	0.59		No	2	No	0.0E+00	0.0E+00
	Manganese	Metal	CD-SB-3	1,300.00	446.29	20%	1.0E+01	1.4E+01	99.999%	1.0E-04	1.4E-04	0.28		No	160	No	0.0E+00	0.0E+00
	Mercury (elemental)	Metal	BSB02	8.10	0.64	100%	3.2E-01	1.0E-01	99.999%	3.2E-06	1.0E-06	0.0020		No	2	No	0.0E+00	0.0E+00

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
Air Toxics Risk Screening Analysis for LTTD
Soil Sampling Results

			Soil Sampling Data				Uncontrolled Emission Rates		Controlled Emission Rates				NJDEP Reporting Thresholds				Values Used in Risk Screening Analysis	
CAS No.	Chemical	Pollutant Type (VOC, HAP or Metal)	Sample ID for Maximum Concentration	Maximum Concentration (ppm, ug/kg)	Average Concentration (ppm, ug/kg)	Extraction (%)	Short-Term (lb/hr)	Annual (ton/yr)	Control Efficiency (%)	Short-Term (lb/hr)	Annual (ton/yr)	Annual (lb/yr)	Short-Term (lb/hr)	Threshold Exceeded?	Annual (lb/yr)	Threshold Exceeded?	Short-Term (lb/hr)	Annual (ton/yr)
71556	Methyl chloroform	HAP	MW05	0.01	0.00	100%	2.8E-04	6.7E-04	99.981%	5.3E-08	1.3E-07	0.00025		No	2000	No	0.0E+00	0.0E+00
78933	Methyl ethyl ketone	HAP	TP03	0.02	0.01	100%	6.8E-04	1.4E-03	99.981%	1.3E-07	2.7E-07	0.00055		No	2000	No	0.0E+00	0.0E+00
108872	Methylcyclohexane	VOC	CD-SB-14	4.80	1.45	100%	1.9E-01	2.3E-01	99.50%	9.6E-04	1.1E-03	2.3	0.05	No		No	0.0E+00	0.0E+00
75092	Methylene chloride	HAP	MW11	0.02	0.01	100%	7.6E-04	1.1E-03	99.981%	1.4E-07	2.1E-07	0.00042		No	2000	No	0.0E+00	0.0E+00
91203	Naphthalene	HAP	SS09	130.00	2.89	100%	5.2E+00	4.6E-01	99.981%	9.9E-04	8.7E-05	0.17		No	2000	No	0.0E+00	0.0E+00
	Nickel and compounds	Metal	BSB02	377.00	46.32	20%	3.0E+00	1.5E+00	99.999%	3.0E-05	1.5E-05	0.029		No	200	No	0.0E+00	0.0E+00
621647	Nitrosodi-n-propylamine (N-)	VOC	CD-SB-30	1.20	1.20	100%	4.8E-02	1.9E-01	99.50%	2.4E-04	9.5E-04	1.9	0.05	No		No	0.0E+00	0.0E+00
87865	Pentachlorophenol	HAP	CD-SB-30	1.60	1.60	100%	6.4E-02	2.5E-01	99.981%	1.2E-05	4.8E-05	0.10		No	140	No	0.0E+00	0.0E+00
127184	Perchloroethylene	VOC	MW06	6.60	0.66	100%	2.6E-01	1.0E-01	99.50%	1.3E-03	5.2E-04	1.0	0.01	No		No	0.0E+00	0.0E+00
108952	Phenol	HAP	CD-SB-30	1.50	1.35	100%	6.0E-02	2.1E-01	99.981%	1.1E-05	4.0E-05	0.081		No	20	No	0.0E+00	0.0E+00
1336363	Polychlorinated biphenyls (PCBs)	HAP	RA-S19-SS19	22,000.00	578.00	100%	8.8E+02	9.1E+01	99.9999%	8.8E-04	9.1E-05	0.18		No	1.8	No	0.0E+00	0.0E+00
78875	Propylene dichloride	HAP	CD-SB-6	0.50	0.30	100%	2.0E-02	4.7E-02	99.981%	3.8E-06	8.9E-06	0.018		No	200	No	0.0E+00	0.0E+00
	Selenium and compounds	Metal	CD-SB-15	11.80	2.17	20%	9.4E-02	6.8E-02	99.999%	9.4E-07	6.8E-07	0.0014		No	20	No	0.0E+00	0.0E+00
100425	Styrene	HAP	SS09	0.03	0.03	100%	1.3E-03	5.0E-03	99.981%	2.4E-07	9.6E-07	0.0019		No	200	No	0.0E+00	0.0E+00
1746016	Tetrachlorodibenzo(p)dioxin (2,3,7,8-)	HAP		0.01	0.00	100%	4.6E-04	2.1E-04	99.981%	8.8E-08	4.1E-08	0.00008		No	0.00012	No	0.0E+00	0.0E+00
127184	Tetrachloroethylene	HAP	MW06	6.60	0.66	100%	2.6E-01	1.0E-01	99.981%	5.0E-05	2.0E-05	0.039	0.01	No		No	0.0E+00	0.0E+00
108883	Toluene	HAP	SS09	7.50	0.97	100%	3.0E-01	1.5E-01	99.981%	5.7E-05	2.9E-05	0.058		No	2000	No	0.0E+00	0.0E+00
120821	Trichlorobenzene (1,2,4-)	HAP	TP05	12.00	3.61	100%	4.8E-01	5.7E-01	99.981%	9.1E-05	1.1E-04	0.22		No	2000	No	0.0E+00	0.0E+00
71556	Trichloroethane (1,1,1-)	VOC	MW05	0.01	0.00	100%	2.8E-04	6.7E-04	99.50%	1.4E-06	3.4E-06	0.0067		No	2000	No	0.0E+00	0.0E+00
79005	Trichloroethane (1,1,2-)	HAP	MW11	0.00	0.00	100%	8.0E-05	3.2E-04	99.981%	1.5E-08	6.0E-08	0.00012	0.01	No		No	0.0E+00	0.0E+00
79016	Trichloroethylene	HAP	CD-SB-15	210.00	10.91	100%	8.4E+00	1.7E+00	99.981%	1.6E-03	3.3E-04	0.65	0.01	No		No	0.0E+00	0.0E+00
75694	Trichlorofluoromethane	VOC	MW05	0.01	0.01	100%	3.2E-04	7.9E-04	99.50%	1.6E-06	3.9E-06	0.0079	0.05	No		No	0.0E+00	0.0E+00
75014	Vinyl chloride	HAP	BSB61	2.80	0.42	100%	1.1E-01	6.6E-02	99.981%	2.1E-05	1.3E-05	0.025		No	40	No	0.0E+00	0.0E+00
75354	Vinylidene chloride	HAP	CD-SB-6	4.00	1.85	100%	1.6E-01	2.9E-01	99.981%	3.0E-05	5.5E-05	0.11		No	80	No	0.0E+00	0.0E+00
	Xylene (m-,o-,p-, or mixed isomers)	HAP	SS09	2.70	0.23	100%	1.1E-01	3.7E-02	99.981%	2.1E-05	7.0E-06	0.014		No	2000	No	0.0E+00	0.0E+00
	Zinc/zinc oxide	Metal	CD-SB-3	4,040.00	401.71	20%	3.2E+01	1.3E+01	99.999%	3.2E-04	1.3E-04	0.25		No	2	No	0.0E+00	0.0E+00

Notes:
Soil sampling data based on maximum and average concentrations provided by Malcolm-Pirnie.

NJDEP DIVISION OF AIR QUALITY RISK SCREENING WORKSHEET
For Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects

For review of new and altered permits. NOT TO BE USED FOR SOURCES WITHOUT STACKS, such as certain dry cleaners, degreasers, storage tanks, and gasoline stations. For information on how to evaluate risk from other kinds of sources, contact Air Quality Evaluation at 609-633-1110.

Chemicals in italics are listed elsewhere with another name (see attached comment or appropriate letter at the bottom of the spreadsheet).

For a listing of chemicals by CAS number, click on the "CAS Index" tab at the bottom of the page.

This is a protected file. Changes are allowed only to certain cells (those in yellow). It is also a "read only" file. To save the data you input, go to "File;" then "Save as" wherever you like, under the name of your choice. Input data only to yellow fields. Incremental cancer risk (IR) and hazard quotient (HQ) will calculate automatically when you type in the stack parameters (stack height and distance to property line) and an emission rate.

For references for toxicity data (URFs and RfCs), see the lists at www.nj.gov/dep/aqpp/risk.html.

Date	5/17/2009
Facility ID No.	18786
Activity ID No.	PCP090001
Facility name	Maxymillian Technologies Inc. (former Cornell Dubilier Electronics Superfund Site)
Facility location	South Plainfield
File name (.xls)	Maxymillian Risk Screening Analysis.xls

Stack height	20.0	ft
Distance to property line	200	ft
Annual air impact value, C'	3.82	**(ug/m³)/(ton/yr)**
24-hour air impact value, C'_{st}	152.3	**(ug/m³)/(lb/hr)**

KEY:

Long-Term Effects

Q = Annual emission rate (in tons per year)
C = C' x Q = Annual average ambient air concentration
URF = Unit risk factor (for carcinogenic risk)
IR = C x URF = Incremental risk (for carcinogen)
RfC = Reference concentration (for noncarcinogenic effects)
HQ = C/RfC = Hazard quotient (for noncarcinogenic risk)

Short-Term Effects

Q_h = Hourly emission rate (in pounds per hour)
C_{st} = C'_{st} x Q_h = Short-term average ambient air concentration
RfC_{st} = Short-term reference concentration (for noncarcinogenic effects)
HQ_{st} = C_{st}/RfC_{st} = Hazard quotient for short-term noncarcinogenic effects

Maxymillian Technologies Inc. (former Cornell Dubilier Ele

			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS No.	Chemical	Q (ton/yr)	C (ug/m³)	URF [(ug/m³)⁻¹]	IR	RfC (ug/m³)	HQ	Q_h (lb/hr)	C_{st} (ug/m³)	RfC_{st} (ug/m³)	HQ_{st}
*	75070	Acetaldehyde	0.0E+00	0.0E+00	2.2E-06	**0.0E+00**	9	**0.0E+00**	0.0E+00			
*	60353	Acetamide	0.0E+00	0.0E+00	2.0E-05	**0.0E+00**			0.0E+00			
	67641	Acetone	0.0E+00	0.0E+00			31000	**0.0E+00**	0.0E+00	0.0E+00	62000	**0.0E+00**
	75865	Acetone cyanohydrin	0.0E+00	0.0E+00			10	**0.0E+00**	0.0E+00			
*	75058	Acetonitrile	0.0E+00	0.0E+00			60	**0.0E+00**	0.0E+00			
*	98862	Acetophenone	0.0E+00	0.0E+00			0.02	**0.0E+00**	0.0E+00			
*	53963	Acetylaminofluorene (2-)	0.0E+00	0.0E+00	1.3E-03	**0.0E+00**			0.0E+00			
*	107028	Acrolein	0.0E+00	0.0E+00			0.02	**0.0E+00**	0.0E+00	0.0E+00	0.19	**0.0E+00**
*	79061	Acrylamide	0.0E+00	0.0E+00	1.3E-03	**0.0E+00**			0.0E+00			
*	79107	Acrylic acid	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00	0.0E+00	6000	**0.0E+00**
*	107131	Acrylonitrile	0.0E+00	0.0E+00	6.8E-05	**0.0E+00**	2	**0.0E+00**	0.0E+00			
	309002	Aldrin	0.0E+00	0.0E+00	4.9E-03	**0.0E+00**			0.0E+00			
*	107051	Allyl chloride	0.0E+00	0.0E+00	6.0E-06	**0.0E+00**	1	**0.0E+00**	0.0E+00			
	117793	Aminoanthraquinone (2-)	0.0E+00	0.0E+00	9.4E-06	**0.0E+00**			0.0E+00			
*	92671	Aminobiphenyl (4-)	0.0E+00	0.0E+00	6.0E-03	**0.0E+00**			0.0E+00			
	7664417	Ammonia	0.0E+00	0.0E+00			100	**0.0E+00**	0.0E+00	0.0E+00	3200	**0.0E+00**
*	62533	Aniline	0.0E+00	0.0E+00	1.6E-06	**0.0E+00**	1	**0.0E+00**	0.0E+00	0.0E+00	380	**0.0E+00**
*	90040	Anisidine (o-)	0.0E+00	0.0E+00	4.0E-05	**0.0E+00**			0.0E+00			
**	1309644	Antimony trioxide	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00			
	140578	Aramite	0.0E+00	0.0E+00	7.1E-06	**0.0E+00**			0.0E+00			
*		Arsenic (inorganic)	0.0E+00	0.0E+00	4.3E-03	**0.0E+00**	0.03	**0.0E+00**	0.0E+00	0.0E+00	0.19	**0.0E+00**
**	7784421	Arsine	0.0E+00	0.0E+00			0.05	**0.0E+00**	0.0E+00	0.0E+00	160	**0.0E+00**
*	1332214	Asbestos	0.0E+00	0.0E+00	7.7E-03	**0.0E+00**			0.0E+00			
	103333	Azobenzene	0.0E+00	0.0E+00	3.1E-05	**0.0E+00**			0.0E+00			
		Barium	0.0E+00						0.0E+00	0.0E+00	0.5	**0.0E+00**
*	71432	Benzene	0.0E+00	0.0E+00	7.8E-06	**0.0E+00**	30	**0.0E+00**	0.0E+00	0.0E+00	1300	**0.0E+00**
*	92875	Benzidine	0.0E+00	0.0E+00	6.7E-02	**0.0E+00**			0.0E+00			
**	50328	Benzo(a)pyrene	0.0E+00	0.0E+00	1.1E-03	**0.0E+00**			0.0E+00			
*	98077	Benzotrichloride	0.0E+00	0.0E+00	3.7E-03	**0.0E+00**			0.0E+00			
*	100447	Benzyl chloride	0.0E+00	0.0E+00	4.9E-05	**0.0E+00**			0.0E+00	0.0E+00	240	**0.0E+00**
*		Beryllium	0.0E+00	0.0E+00	2.4E-03	**0.0E+00**	0.02	**0.0E+00**	0.0E+00			

NJDEP DIVISION OF AIR QUALITY RISK SCREENING WORKSHEET
For Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects

Maxymillian Technologies Inc. (former Cornell Dubilier Ele

			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS No.	Chemical	Q (ton/yr)	C (ug/m^3)	URF $[(ug/m^3)^{-1}]$	IR	RfC (ug/m^3)	HQ	Q_h (lb/hr)	C_{st} (ug/m^3)	RfC_{st} (ug/m^3)	HQ_{st}
a	111444	*Bis(2-chloroethyl)ether*	0.0E+00						0.0E+00			
	108601	Bis(2-chloroisopropyl)ether	0.0E+00	0.0E+00	1.0E-05	**0.0E+00**			0.0E+00			
*	117817	Bis(2-ethylhexyl)phthalate	0.0E+00	0.0E+00	2.4E-06	**0.0E+00**	70	**0.0E+00**	0.0E+00			
*	542881	Bis(chloromethyl)ether	0.0E+00	0.0E+00	6.2E-02	**0.0E+00**			0.0E+00			
	7440428	Boron (elemental)	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00			
	7637072	Boron trifluoride	0.0E+00	0.0E+00			0.7	**0.0E+00**	0.0E+00			
b	593602	*Bromoethene*	0.0E+00						0.0E+00			
*	75252	Bromoform	0.0E+00	0.0E+00	1.1E-06	**0.0E+00**			0.0E+00			
c	74839	*Bromomethane*	0.0E+00						0.0E+00			
*	106990	Butadiene (1,3-)	0.0E+00	0.0E+00	3.0E-05	**0.0E+00**	2	**0.0E+00**	0.0E+00			
*		Cadmium	0.0E+00	0.0E+00	4.2E-03	**0.0E+00**	0.02	**0.0E+00**	0.0E+00			
*	133062	Captan	0.0E+00	0.0E+00	6.6E-07	**0.0E+00**			0.0E+00			
*	75150	Carbon disulfide	0.0E+00	0.0E+00			700	**0.0E+00**	0.0E+00	0.0E+00	6200	**0.0E+00**
*	56235	Carbon tetrachloride	0.0E+00	0.0E+00	1.5E-05	**0.0E+00**	40	**0.0E+00**	0.0E+00	0.0E+00	1900	**0.0E+00**
*	57749	Chlordane	0.0E+00	0.0E+00	1.0E-04	**0.0E+00**	0.7	**0.0E+00**	0.0E+00			
	108171262	Chlorinated paraffins	0.0E+00	0.0E+00	2.0E-05	**0.0E+00**			0.0E+00			
*	7782505	Chlorine	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00	0.0E+00	210	**0.0E+00**
	10049044	Chlorine dioxide	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00	0.0E+00	28	**0.0E+00**
	75683	Chloro-1,1-difluoroethane (1-) *(HCFC-142b)*	0.0E+00	0.0E+00			50000	**0.0E+00**	0.0E+00			
d	126998	*Chloro-1,3-butadiene (2-)*	0.0E+00						0.0E+00			
*	532274	Chloroacetophenone (2-)	0.0E+00	0.0E+00			0.03	**0.0E+00**	0.0E+00			
*	108907	Chlorobenzene	0.0E+00	0.0E+00			1000	**0.0E+00**	0.0E+00			
*	510156	Chlorobenzilate	0.0E+00	0.0E+00	3.1E-05	**0.0E+00**			0.0E+00			
	74456	Chlorodifluoromethane *(HCFC-22)*	0.0E+00	0.0E+00			50000	**0.0E+00**	0.0E+00			
*	67663	Chloroform	0.0E+00	0.0E+00	2.3E-05	**0.0E+00**			0.0E+00	0.0E+00	150	**0.0E+00**
e	74873	*Chloromethane*	0.0E+00						0.0E+00			
*	107032	Chloromethyl methyl ether	0.0E+00	0.0E+00	6.9E-04	**0.0E+00**			0.0E+00			
	95860	Chloro-o-phenylenediamine (4-)	0.0E+00	0.0E+00	4.6E-06	**0.0E+00**			0.0E+00			
	95692	Chloro-o-toluidine (p-)	0.0E+00	0.0E+00	7.7E-05	**0.0E+00**			0.0E+00			
	76062	Chloropicrin	0.0E+00	0.0E+00			0.4	**0.0E+00**	0.0E+00	0.0E+00	29	**0.0E+00**
*	126998	Chloroprene	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00			
	75296	Chloropropane (2-)	0.0E+00	0.0E+00			100	**0.0E+00**	0.0E+00			
**		Chromic acid mists (Cr VI)	0.0E+00	0.0E+00			0.008	**0.0E+00**	0.0E+00			
**	18540299	Chromium VI (total)	0.0E+00	0.0E+00	1.2E-02	**0.0E+00**			0.0E+00			
**		Chromium VI dissolved aerosols	0.0E+00	0.0E+00			0.008	**0.0E+00**	0.0E+00			
**		Chromium VI particulates	0.0E+00	0.0E+00			0.1	**0.0E+00**	0.0E+00			
*		Cobalt	0.0E+00	0.0E+00			0.005	**0.0E+00**	0.0E+00			
*	8007452	Coke oven emissions	0.0E+00	0.0E+00	6.2E-04	**0.0E+00**			0.0E+00			
		Copper	0.0E+00	0.0E+00			2.4	**0.0E+00**	0.0E+00	0.0E+00	100	**0.0E+00**
	120718	Cresidine (p-)	0.0E+00	0.0E+00	4.3E-05	**0.0E+00**			0.0E+00			
*		Cresol mixtures	0.0E+00	0.0E+00			600	**0.0E+00**	0.0E+00			
	98828	Cumene	0.0E+00	0.0E+00			400	**0.0E+00**	0.0E+00			
	135206	Cupferron	0.0E+00	0.0E+00	6.3E-05	**0.0E+00**			0.0E+00			
	110827	Cyclohexane	0.0E+00						0.0E+00	0.0E+00	6000	**0.0E+00**
	50293	DDT	0.0E+00	0.0E+00	9.7E-05	**0.0E+00**			0.0E+00			
f	117817	*Di(2-ethylhexyl)phthalate*	0.0E+00						0.0E+00			
	615054	Diaminoanisole (2,4-)	0.0E+00	0.0E+00	6.6E-06	**0.0E+00**			0.0E+00			
g	95807	*Diaminotoluene (2,4-)*	0.0E+00						0.0E+00			
*	96128	Dibromo-3-chloropropane (1,2-)	0.0E+00	0.0E+00	2.0E-03	**0.0E+00**	0.2	**0.0E+00**	0.0E+00			
h	106934	*Dibromoethane (1,2-)*	0.0E+00						0.0E+00			
	764410	Dichloro-2-butene (1,4-)	0.0E+00	0.0E+00	2.6E-03	**0.0E+00**			0.0E+00			
	95501	Dichlorobenzene (1,2-)	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00			
*	106467	Dichlorobenzene (1,4-)	0.0E+00	0.0E+00	1.1E-05	**0.0E+00**	800	**0.0E+00**	0.0E+00			
*	91941	Dichlorobenzidine (3,3'-)	0.0E+00	0.0E+00	3.4E-04	**0.0E+00**			0.0E+00			
	75718	Dichlorodifluoromethane	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00			
i	75343	*Dichloroethane (1,1-)*	0.0E+00						0.0E+00			
j	107062	*Dichloroethane (1,2-)*	0.0E+00						0.0E+00			
*	111444	Dichloroethyl ether	0.0E+00	0.0E+00	3.3E-04	**0.0E+00**			0.0E+00			
k	75354	*Dichloroethylene (1,1-)*	0.0E+00						0.0E+00			
l	75092	*Dichloromethane*	0.0E+00						0.0E+00			
m	78875	*Dichloropropane (1,2-)*	0.0E+00						0.0E+00			

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Maxymillian Technologies Inc. (former Cornell Dubilier Elec

			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS No.	Chemical	Q (ton/yr)	C (ug/m^3)	URF $[(ug/m^3)^{-1}]$	IR	RfC (ug/m^3)	HQ	Q_h (lb/hr)	C_{st} (ug/m^3)	RfC_{st} (ug/m^3)	HQ_{st}
*	542756	Dichloropropene (1,3-)	0.0E+00	0.0E+00	4.0E-06	**0.0E+00**	20	**0.0E+00**	0.0E+00			
*	62737	Dichlorvos	0.0E+00	0.0E+00	8.3E-05	**0.0E+00**	0.5	**0.0E+00**	0.0E+00			
	77736	Dicyclopentadiene	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00			
	60571	Dieldrin	0.0E+00	0.0E+00	4.6E-03	**0.0E+00**			0.0E+00			
		Diesel particulate matter	0.0E+00	0.0E+00	3.0E-04	**0.0E+00**	5	**0.0E+00**	0.0E+00			
*	111422	Diethanolamine	0.0E+00	0.0E+00			3	**0.0E+00**	0.0E+00			
	112345	Diethylene glycol monobutyl ether	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00			
	75376	Difluoroethane (1,1-)	0.0E+00	0.0E+00			40000	**0.0E+00**	0.0E+00			
*	77781	Dimethyl sulfate	0.0E+00	0.0E+00	4.0E-03	**0.0E+00**			0.0E+00			
*	60117	Dimethylaminoazobenzene (4-)	0.0E+00	0.0E+00	1.3E-03	**0.0E+00**			0.0E+00			
*	79447	Dimethylcarbamyl chloride	0.0E+00	0.0E+00	3.7E-03	**0.0E+00**			0.0E+00			
*	68122	Dimethylformamide (N,N-)	0.0E+00	0.0E+00			30	**0.0E+00**	0.0E+00			
*	57147	Dimethylhydrazine (1,1-)	0.0E+00	0.0E+00	1.0E-03	**0.0E+00**			0.0E+00			
	540738	Dimethylhydrazine (1,2-)	0.0E+00	0.0E+00	1.6E-01	**0.0E+00**			0.0E+00			
*	121142	Dinitrotoluene (2,4-)	0.0E+00	0.0E+00	8.9E-05	**0.0E+00**			0.0E+00			
*	123911	Dioxane (1,4-)	0.0E+00	0.0E+00	7.7E-06	**0.0E+00**			0.0E+00	0.0E+00	3000	**0.0E+00**
n		*Dioxin*	0.0E+00						0.0E+00			
*	122667	Diphenylhydrazine (1,2-)	0.0E+00	0.0E+00	2.2E-04	**0.0E+00**			0.0E+00			
*	106898	Epichlorohydrin	0.0E+00	0.0E+00	1.2E-06	**0.0E+00**	1	**0.0E+00**	0.0E+00	0.0E+00	1300	**0.0E+00**
*	106887	Epoxybutane (1,2-)	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00			
o	110805	*Ethoxyethanol (2-)*	0.0E+00						0.0E+00			
*	140885	Ethyl acrylate	0.0E+00	0.0E+00	5.0E-07	**0.0E+00**			0.0E+00			
*	51796	Ethyl carbamate	0.0E+00	0.0E+00	2.9E-04	**0.0E+00**			0.0E+00			
*	75003	Ethyl chloride	0.0E+00						0.0E+00	0.0E+00	10000	**0.0E+00**
*	100414	Ethylbenzene	0.0E+00	0.0E+00	2.5E-06	**0.0E+00**			0.0E+00	0.0E+00	1000	**0.0E+00**
*	106934	Ethylene dibromide	0.0E+00	0.0E+00	6.0E-04	**0.0E+00**	0.8	**0.0E+00**	0.0E+00			
*	107062	Ethylene dichloride	0.0E+00	0.0E+00	2.6E-05	**0.0E+00**	400	**0.0E+00**	0.0E+00			
*	107211	Ethylene glycol	0.0E+00	0.0E+00			400	**0.0E+00**	0.0E+00			
*	111762	Ethylene glycol monobutyl ether	0.0E+00	0.0E+00			13000	**0.0E+00**	0.0E+00	0.0E+00	14000	**0.0E+00**
**	110805	Ethylene glycol monoethyl ether	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00	0.0E+00	370	**0.0E+00**
**	111159	Ethylene glycol monoethyl ether acetate	0.0E+00						0.0E+00	0.0E+00	140	**0.0E+00**
**	109864	Ethylene glycol monomethyl ether	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00	0.0E+00	93	**0.0E+00**
**	110496	Ethylene glycol monomethyl ether acetate	0.0E+00	0.0E+00			90	**0.0E+00**	0.0E+00			
*	75218	Ethylene oxide	0.0E+00	0.0E+00	8.8E-05	**0.0E+00**	30	**0.0E+00**	0.0E+00	0.0E+00	42	**0.0E+00**
*	96457	Ethylene thiourea	0.0E+00	0.0E+00	1.3E-05	**0.0E+00**			0.0E+00			
*	151564	Ethyleneimine	0.0E+00	0.0E+00	1.9E-02	**0.0E+00**			0.0E+00			
*	75343	Ethylidene dichloride	0.0E+00	0.0E+00	1.6E-06	**0.0E+00**	500	**0.0E+00**	0.0E+00			
	16984488	Fluoride	0.0E+00	0.0E+00			13	**0.0E+00**	0.0E+00			
*	50000	Formaldehyde	0.0E+00	0.0E+00	1.3E-05	**0.0E+00**	3	**0.0E+00**	0.0E+00	0.0E+00	94	**0.0E+00**
	98011	Furfural	0.0E+00	0.0E+00			50	**0.0E+00**	0.0E+00			
		Gasoline vapors	0.0E+00	0.0E+00	1.0E-06	**0.0E+00**	15	**0.0E+00**	0.0E+00			
	111308	Glutaraldehyde	0.0E+00	0.0E+00			0.08	**0.0E+00**	0.0E+00			
	765344	Glycidaldehyde	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00			
*	76448	Heptachlor	0.0E+00	0.0E+00	1.3E-03	**0.0E+00**			0.0E+00			
	1024573	Heptachlor epoxide	0.0E+00	0.0E+00	2.6E-03	**0.0E+00**			0.0E+00			
*	118741	Hexachlorobenzene	0.0E+00	0.0E+00	4.6E-04	**0.0E+00**			0.0E+00			
*	87683	Hexachlorobutadiene	0.0E+00	0.0E+00	2.2E-05	**0.0E+00**			0.0E+00			
**	319846	Hexachlorocyclohexane (alpha-)	0.0E+00	0.0E+00	1.8E-03	**0.0E+00**			0.0E+00			
**	319857	Hexachlorocyclohexane (beta-)	0.0E+00	0.0E+00	5.3E-04	**0.0E+00**			0.0E+00			
*	58899	Hexachlorocyclohexane (gamma-)	0.0E+00	0.0E+00	3.1E-04	**0.0E+00**			0.0E+00			
**	608731	Hexachlorocyclohexane (technical grade)	0.0E+00	0.0E+00	5.1E-04	**0.0E+00**			0.0E+00			
*	77474	Hexachlorocyclopentadiene	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00			
	19408743	Hexachlorodibenzo-p-dioxin, mixture	0.0E+00	0.0E+00	1.3E+00	**0.0E+00**			0.0E+00			
*	67721	Hexachloroethane	0.0E+00	0.0E+00	4.0E-06	**0.0E+00**			0.0E+00			
*	822060	Hexamethylene diisocyanate	0.0E+00	0.0E+00			0.01	**0.0E+00**	0.0E+00			
*	110543	Hexane (N-)	0.0E+00	0.0E+00			700	**0.0E+00**	0.0E+00			
*	302012	Hydrazine	0.0E+00	0.0E+00	4.9E-03	**0.0E+00**	0.2	**0.0E+00**	0.0E+00	0.0E+00	10	**0.0E+00**
	10034932	Hydrazine sulfate	0.0E+00	0.0E+00	4.9E-03	**0.0E+00**			0.0E+00			
*	7647010	Hydrogen chloride	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00	0.0E+00	2100	**0.0E+00**
**	74908	Hydrogen cyanide	0.0E+00	0.0E+00			3	**0.0E+00**	0.0E+00	0.0E+00	340	**0.0E+00**
*	*7664393*	Hydrogen fluoride	0.0E+00	0.0E+00			14	**0.0E+00**	0.0E+00	0.0E+00	240	**0.0E+00**

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Maxymillian Technologies Inc. (former Cornell Dubilier Elec			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS No.	Chemical	Q (ton/yr)	C (ug/m^3)	URF $[(ug/m^3)^{-1}]$	IR	RfC (ug/m^3)	HQ	Q_h (lb/hr)	C_{st} (ug/m^3)	RfC_{st} (ug/m^3)	HQ_{st}
**	7783075	Hydrogen selenide	0.0E+00	0.0E+00					0.0E+00	0.0E+00	5	**0.0E+00**
	7783064	Hydrogen sulfide	0.0E+00	0.0E+00			2	**0.0E+00**	0.0E+00	0.0E+00	42	**0.0E+00**
*	78591	Isophorone	0.0E+00	0.0E+00			2000	**0.0E+00**	0.0E+00			
	67630	Isopropanol	0.0E+00	0.0E+00					0.0E+00	0.0E+00	3200	**0.0E+00**
*		Lead	0.0E+00	0.0E+00	1.2E-05	**0.0E+00**			0.0E+00	0.0E+00	0.1	**0.0E+00**
p	58899	*Lindane*	0.0E+00						0.0E+00			
*	108316	Maleic anhydride	0.0E+00	0.0E+00			0.7	**0.0E+00**	0.0E+00			
*		Manganese	0.0E+00	0.0E+00			0.05	**0.0E+00**	0.0E+00			
*		Mercury (elemental)	0.0E+00	0.0E+00			0.3	**0.0E+00**	0.0E+00	0.0E+00	1.8	**0.0E+00**
	126987	Methacrylonitrile	0.0E+00	0.0E+00			0.7	**0.0E+00**	0.0E+00			
*	67561	Methanol	0.0E+00	0.0E+00			4000	**0.0E+00**	0.0E+00	0.0E+00	28000	**0.0E+00**
q	109864	*Methoxyethanol (2-)*	0.0E+00						0.0E+00			
*	74839	Methyl bromide	0.0E+00	0.0E+00			5	**0.0E+00**	0.0E+00	0.0E+00	3900	**0.0E+00**
*	74873	Methyl chloride	0.0E+00	0.0E+00	1.8E-06	**0.0E+00**	90	**0.0E+00**	0.0E+00			
*	71556	Methyl chloroform	0.0E+00	0.0E+00			1000	**0.0E+00**	0.0E+00	0.0E+00	68000	**0.0E+00**
*	78933	Methyl ethyl ketone	0.0E+00						0.0E+00	0.0E+00	5000	**0.0E+00**
*	108101	Methyl isobutyl ketone	0.0E+00						0.0E+00	0.0E+00	3000	**0.0E+00**
*	624839	Methyl isocyanate	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00			
**		Methyl mercury	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00			
*	80626	Methyl methacrylate	0.0E+00	0.0E+00			700	**0.0E+00**	0.0E+00			
	25013154	Methyl styrene (mixed isomers)	0.0E+00	0.0E+00			40	**0.0E+00**	0.0E+00			
*	1634044	Methyl tert butyl ether	0.0E+00	0.0E+00	2.6E-07	**0.0E+00**	3000	**0.0E+00**	0.0E+00			
	108872	Methylcyclohexane	0.0E+00	0.0E+00			3000	**0.0E+00**	0.0E+00			
*	101144	Methylene bis(2-chloroaniline) (4,4'-)	0.0E+00	0.0E+00	4.3E-04	**0.0E+00**			0.0E+00			
*	75092	Methylene chloride	0.0E+00	0.0E+00	4.7E-07	**0.0E+00**	400	**0.0E+00**	0.0E+00	0.0E+00	14000	**0.0E+00**
	101779	Methylenedianiline (4,4-)	0.0E+00	0.0E+00	4.6E-04	**0.0E+00**	20	**0.0E+00**	0.0E+00			
*	101688	Methylenediphenyl diisocyanate (4,4'-)	0.0E+00	0.0E+00			0.6	**0.0E+00**	0.0E+00			
	90948	Michler's ketone	0.0E+00	0.0E+00	2.5E-04	**0.0E+00**			0.0E+00			
*		Mineral fibers (<1% free silica)	0.0E+00	0.0E+00			24	**0.0E+00**	0.0E+00			
*	91203	Naphthalene	0.0E+00	0.0E+00	3.4E-05	**0.0E+00**	3	**0.0E+00**	0.0E+00			
*		Nickel and compounds	0.0E+00	0.0E+00	2.4E-04	**0.0E+00**	0.05	**0.0E+00**	0.0E+00	0.0E+00	6	**0.0E+00**
**	1313991	Nickel oxide	0.0E+00	0.0E+00			0.1	**0.0E+00**	0.0E+00			
**		Nickel, soluble salts	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00			
	7697372	Nitric acid	0.0E+00						0.0E+00	0.0E+00	86	**0.0E+00**
	88744	Nitroaniline (o-)	0.0E+00	0.0E+00			0.2	**0.0E+00**	0.0E+00			
*	98953	Nitrobenzene	0.0E+00	0.0E+00			1.7	**0.0E+00**	0.0E+00			
*	79469	Nitropropane (2-)	0.0E+00	0.0E+00	2.7E-03	**0.0E+00**	20	**0.0E+00**	0.0E+00			
	55185	Nitrosodiethylamine (N-)	0.0E+00	0.0E+00	4.3E-02	**0.0E+00**			0.0E+00			
*	62759	Nitrosodimethylamine (N-)	0.0E+00	0.0E+00	1.4E-02	**0.0E+00**			0.0E+00			
	924163	Nitrosodi-n-butylamine (N-)	0.0E+00	0.0E+00	1.6E-03	**0.0E+00**			0.0E+00			
	621647	Nitrosodi-n-propylamine (N-)	0.0E+00	0.0E+00	2.0E-03	**0.0E+00**			0.0E+00			
	86306	Nitrosodiphenylamine (N-)	0.0E+00	0.0E+00	2.6E-06	**0.0E+00**			0.0E+00			
	156105	Nitrosodiphenylamine (p-)	0.0E+00	0.0E+00	6.3E-06	**0.0E+00**			0.0E+00			
	10595956	Nitrosomethylethylamine (N-)	0.0E+00	0.0E+00	6.3E-03	**0.0E+00**			0.0E+00			
*	59892	Nitrosomorpholine (N-)	0.0E+00	0.0E+00	1.9E-03	**0.0E+00**			0.0E+00			
	759739	Nitroso-n-ethylurea (N-)	0.0E+00	0.0E+00	7.7E-03	**0.0E+00**			0.0E+00			
*	684935	Nitroso-n-methylurea (N-)	0.0E+00	0.0E+00	3.4E-02	**0.0E+00**			0.0E+00			
	100754	Nitrosopiperidine (N-)	0.0E+00	0.0E+00	2.7E-03	**0.0E+00**			0.0E+00			
	930552	Nitrosopyrrolidine (N-)	0.0E+00	0.0E+00	6.1E-04	**0.0E+00**			0.0E+00			
*	87865	Pentachlorophenol	0.0E+00	0.0E+00	5.1E-06	**0.0E+00**			0.0E+00			
r	127184	*Perchloroethylene*	0.0E+00						0.0E+00			
*	108952	Phenol	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00	0.0E+00	5800	**0.0E+00**
*	75445	Phosgene	0.0E+00	0.0E+00			0.3	**0.0E+00**	0.0E+00	0.0E+00	4	**0.0E+00**
*	7803512	Phosphine	0.0E+00	0.0E+00			0.3	**0.0E+00**	0.0E+00			
*	7664382	Phosphoric acid	0.0E+00	0.0E+00			10	**0.0E+00**	0.0E+00			
*		Phosphorus (white)	0.0E+00	0.0E+00			0.07	**0.0E+00**	0.0E+00			
*	85449	Phthalic anhydride	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00			
*	1336363	Polychlorinated biphenyls (PCBs)	0.0E+00	0.0E+00	1.0E-04	**0.0E+00**			0.0E+00			
s		*Polycylic aromatic hydrocarbons (PAHs)*	0.0E+00						0.0E+00			
s		*Polycylic organic matter (POM)*	0.0E+00						0.0E+00			
	7758012	Potassium bromate	0.0E+00	0.0E+00	1.4E-04	**0.0E+00**			0.0E+00			

NJDEP DIVISION OF AIR QUALITY RISK SCREENING WORKSHEET
For Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects

Maxymillian Technologies Inc. (former Cornell Dubilier Ele

			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS No.	Chemical	Q (ton/yr)	C (ug/m^3)	URF $[(ug/m^3)^{-1}]$	IR	RfC (ug/m^3)	HQ	Q_h (lb/hr)	C_{st} (ug/m^3)	RfC_{st} (ug/m^3)	HQ_{st}
*	1120714	Propane sultone (1,3-)	0.0E+00	0.0E+00	6.9E-04	**0.0E+00**			0.0E+00			
*	57578	Propiolactone (beta-)	0.0E+00	0.0E+00	4.0E-03	**0.0E+00**			0.0E+00			
	115071	Propylene	0.0E+00	0.0E+00			3000	**0.0E+00**	0.0E+00			
*	78875	Propylene dichloride	0.0E+00	0.0E+00	1.0E-05	**0.0E+00**	4	**0.0E+00**	0.0E+00			
	57556	Propylene glycol	0.0E+00	0.0E+00			6000	**0.0E+00**	0.0E+00			
	107982	Propylene glycol monomethyl ether	0.0E+00	0.0E+00			2000	**0.0E+00**	0.0E+00			
*	75569	Propylene oxide	0.0E+00	0.0E+00	3.7E-06	**0.0E+00**	30	**0.0E+00**	0.0E+00	0.0E+00	3100	**0.0E+00**
*	91225	Quinoline	0.0E+00	0.0E+00	8.6E-04	**0.0E+00**			0.0E+00			
**		Selenium and compounds	0.0E+00	0.0E+00			20	**0.0E+00**	0.0E+00			
	7631869	Silica (crystalline, respirable)	0.0E+00	0.0E+00			3	**0.0E+00**	0.0E+00			
	1310732	Sodium hydroxide	0.0E+00	0.0E+00					0.0E+00	0.0E+00	8	**0.0E+00**
*	100425	Styrene	0.0E+00	0.0E+00	5.7E-07	**0.0E+00**	1000	**0.0E+00**	0.0E+00	0.0E+00	21000	**0.0E+00**
*	96093	Styrene oxide	0.0E+00	0.0E+00	4.6E-05	**0.0E+00**			0.0E+00			
		Sulfates	0.0E+00						0.0E+00	0.0E+00	120	**0.0E+00**
	7664939	Sulfuric acid	0.0E+00	0.0E+00			1	**0.0E+00**	0.0E+00	0.0E+00	120	**0.0E+00**
*	1746016	Tetrachlorodibenzo(p)dioxin (2,3,7,8-)	0.0E+00	0.0E+00	3.7E+01	**0.0E+00**			0.0E+00			
	630206	Tetrachloroethane (1,1,1,2-)	0.0E+00	0.0E+00	7.4E-06	**0.0E+00**			0.0E+00			
*	79345	Tetrachloroethane (1,1,2,2-)	0.0E+00	0.0E+00	5.8E-05	**0.0E+00**			0.0E+00			
*	127184	Tetrachloroethylene	0.0E+00	0.0E+00	5.9E-06	**0.0E+00**	35	**0.0E+00**	0.0E+00	0.0E+00	20000	**0.0E+00**
	811972	Tetrafluoroethane (1,1,1,2-)	0.0E+00	0.0E+00			80000	**0.0E+00**	0.0E+00			
	62555	Thioacetamide	0.0E+00	0.0E+00	1.7E-03	**0.0E+00**			0.0E+00			
*	7550450	Titanium tetrachloride	0.0E+00	0.0E+00			0.1	**0.0E+00**	0.0E+00			
*	108883	Toluene	0.0E+00	0.0E+00			300	**0.0E+00**	0.0E+00	0.0E+00	37000	**0.0E+00**
*	584849	Toluene diisocyanate (2,4-)	0.0E+00	0.0E+00	1.1E-05	**0.0E+00**	0.07	**0.0E+00**	0.0E+00	0.0E+00	7	**0.0E+00**
*	26471625	Toluene diisocyanate (2,4-/2,6-)	0.0E+00	0.0E+00	1.1E-05	**0.0E+00**	0.07	**0.0E+00**	0.0E+00			
*	91087	Toluene diisocyanate (2,6-)	0.0E+00	0.0E+00	1.1E-05	**0.0E+00**	0.07	**0.0E+00**	0.0E+00			
*	95807	Toluene-2,4-diamine	0.0E+00	0.0E+00	1.1E-03	**0.0E+00**			0.0E+00			
*	95534	Toluidine (o-)	0.0E+00	0.0E+00	5.1E-05	**0.0E+00**			0.0E+00			
*	8001352	Toxaphene	0.0E+00	0.0E+00	3.2E-04	**0.0E+00**			0.0E+00			
	76131	Trichloro-1,2,2-trifluoroethane (1,1,2-)	0.0E+00	0.0E+00			30000	**0.0E+00**	0.0E+00			
*	120821	Trichlorobenzene (1,2,4-)	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00			
t	71556	*Trichloroethane (1,1,1-)*	0.0E+00						0.0E+00			
*	79005	Trichloroethane (1,1,2-)	0.0E+00	0.0E+00	1.6E-05	**0.0E+00**			0.0E+00			
*	79016	Trichloroethylene	0.0E+00	0.0E+00	2.0E-06	**0.0E+00**	600	**0.0E+00**	0.0E+00			
	75694	Trichlorofluoromethane	0.0E+00	0.0E+00			700	**0.0E+00**	0.0E+00			
*	88062	Trichlorophenol (2,4,6-)	0.0E+00	0.0E+00	3.1E-06	**0.0E+00**			0.0E+00			
*	121448	Triethylamine	0.0E+00	0.0E+00			7	**0.0E+00**	0.0E+00	0.0E+00	2800	**0.0E+00**
*	1582098	Trifluralin	0.0E+00	0.0E+00	2.2E-06	**0.0E+00**			0.0E+00			
u	51796	*Urethane*	0.0E+00						0.0E+00			
	1314621	Vanadium pentoxide	0.0E+00	0.0E+00					0.0E+00	0.0E+00	30	**0.0E+00**
*	108054	Vinyl acetate	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00			
*	593602	Vinyl bromide	0.0E+00	0.0E+00	3.2E-05	**0.0E+00**	3	**0.0E+00**	0.0E+00			
*	75014	Vinyl chloride	0.0E+00	0.0E+00	8.8E-06	**0.0E+00**	100	**0.0E+00**	0.0E+00	0.0E+00	180000	**0.0E+00**
*	75354	Vinylidene chloride	0.0E+00	0.0E+00			200	**0.0E+00**	0.0E+00			
*		Xylene (m-,o-,p-, or mixed isomers)	0.0E+00	0.0E+00			100	**0.0E+00**	0.0E+00	0.0E+00	22000	**0.0E+00**
		Zinc/zinc oxide	0.0E+00	0.0E+00			35	**0.0E+00**	0.0E+00			

TOTALS	Total Cancer Risk	**0.0E+00**	Total Hazard Index	**0.0E+00**	Total Short-term Hazard Index	**0.0E+00**

NOTE:

* **Clean Air Act hazardous air pollutant**

** **Clean Air Act hazardous air pollutant, but not listed individually (part of a group)**

a See dichloroethyl ether
b See vinyl bromide
c See methyl bromide
d See chloroprene
e See methyl chloride
f See bis(2-ethylhexyl)phthalate
g See toluene-2,4-diamine

NJDEP DIVISION OF AIR QUALITY RISK SCREENING WORKSHEET
For Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects

Maxymillian Technologies Inc. (former Cornell Dubilier Elec			LONG-TERM EFFECTS						SHORT-TERM EFFECTS			
	CAS NO.	Chemical	Q (ton/yr)	C (ug/m^3)	URF $[(ug/m^3)^{-1}]$	IR	RfC (ug/m^3)	HQ	Q_h (lb/hr)	C_{st} (ug/m^3)	RfC_{st} (ug/m^3)	HQ_{st}

h See ethylene dibromide
i See ethylidene dichloride
j See ethylene dichloride
k See vinylidene chloride
l See methylene chloride
m See propylene dichloride
n May be considered to be all 2,3,7,8-tetrachlorodibenzo(p)dioxin), or separated into congeners (contact AQEv).
o See ethylene glycol monoethyl ether
p See gamma-Hexachlorocyclohexane
q See ethylene glycol methyl ether
r See tetrachloroethylene
s May be considered to be all benzo(a)pyrene, or separated into individual PAHs (contact AQEv).
t See methyl chloroform
u See ethyl carbamate

Maxymillian Technologies Inc.
Cornell Dubilier Electronics Superfund Site - South Plainfield, NJ
Wastewater Treatment Operations

Filter Press - Disposal Volume

Filter Press Volume:	55	ft^3
Density of Filter Press Solids:	120	lb/ft^3
Project Duration:	15	months
Frequency of Filter Press Cleaning:	1	cleaning per week
Filter Press Solids Collected for Disposal:	215	tons

PM_{10} Emission Estimates

Unit	Unit Description	Process Rate (ton/hr)	Process Rate (ton/yr)	Uncontrolled Emission Factor (lb/ton)	Particle Size Multiplier	Mean Wind Speed (mph)	Material Moisture Content (%)	Control Efficiency (%)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Filter Press Solids										
E4	Filter Press Unloading	3.3	172	1.13E-04	0.35	10.2	20.0	70	1.1E-04	2.9E-06

TSP Emission Estimates

Unit	Unit Description	Process Rate (ton/hr)	Process Rate (ton/yr)	Uncontrolled Emission Factor (lb/ton)	Particle Size Multiplier	Mean Wind Speed (mph)	Material Moisture Content (%)	Control Efficiency (%)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Filter Press Solids										
E4	Filter Press Unloading	3.3	172	2.38E-04	0.74	10.2	20.0	70	2.4E-04	6.1E-06

Notes:

Particulate emission estimates are based on the emission calculation methodology specified in AP-42 Chapter 13.2.4.

The particle size multiplier value of 0.35 for PM10 and 0.74 for TSP is based on information from AP-42 Chapter 13.2.4.
The mean wind speed value of 10.2 miles per hour was obtained from historical wind speed data from Newark, NJ maintained on the NOAA website.
The material moisture content for filter press solids is estimated based on engineering judgment.
The control efficiency values for filter press solids are based on engineering judgment due to the location of these units within a building.

VOC/HAP Emission Estimates

Although solid loading operation differ from liquid loading operations, the emission calculation methodology for liquid loading operations was used as a surrogate for estimating VOC emissions from emptying/cleaning filter press operations.

For liquid loading operations:

Emissions (lb/hr) = Liquid Mole Fraction x P (mm Hg) x MW (lb/lb mol) x Vr (ft3/hr) / R (ft3 mm Hg/lb mol °K) / T (°K)

Vapor Displacement (Charging):	55.0 ft^3/hr	
Vapor Displacement (Cleaning):	55.0 ft^3/hr	(Estimated at 1 Filter Press Volume)
Total Rate of Vapor Displ. (Vr):	110.0 ft^3/hr	

Gas Law Constant (R):	999 ft^3 mm Hg/°K lb moles
Temperature:	322 °K

Chemical	Concentration in Filter Press Solids		Mass Fraction	Mol. Wt. (lb/lb mol)	Moles	Mole Fraction	Vapor Pressure @ Temperature (mm Hg)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Benzene	92,000	ug/kg	0.009%	78.11	0.007	0.002%	259.60	1.5E-04	4.0E-06
Chlorobenzene	174,000	ug/kg	0.017%	112.60	0.020	0.006%	40.47	9.3E-05	2.4E-06
1,2-Dichlorobenzene	366,000	ug/kg	0.037%	147.01	0.054	0.016%	6.01	5.0E-05	1.3E-06
1,3-Dichlorobenzene	433,000	ug/kg	0.043%	147.01	0.064	0.019%	8.24	8.0E-05	2.1E-06
1,4-Dichlorobenzene	432,000	ug/kg	0.043%	147.01	0.064	0.019%	7.56	7.4E-05	1.9E-06
Ethylbenzene	197,000	ug/kg	0.020%	106.17	0.021	0.006%	34.75	8.1E-05	2.1E-06
Naphthalene	1,040,000	ug/kg	0.104%	128.20	0.133	0.041%	1.33	2.4E-05	6.2E-07
Styrene	91,200	ug/kg	0.009%	104.15	0.009	0.003%	23.56	2.4E-05	6.3E-07
Toluene	87,700	ug/kg	0.009%	92.13	0.008	0.002%	87.70	6.8E-05	1.8E-06
1,2,3-Trichlorobenzene	187,000	ug/kg	0.019%	181.45	0.034	0.010%	1.66	1.1E-05	2.8E-07
1,2,4-Trichlorobenzene	766,000	ug/kg	0.077%	181.45	0.139	0.042%	1.86	4.9E-05	1.3E-06
1,2,4-Trimethylbenzene	33,800	ug/kg	0.003%	120.19	0.004	0.001%	8.57	4.4E-06	1.1E-07
1,3,5-Trimethylbenzene	19,200	ug/kg	0.002%	120.19	0.002	0.001%	8.57	2.5E-06	6.5E-08
Xylenes	107,600	ug/kg	0.011%	106.17	0.011	0.003%	29.52	3.7E-05	9.7E-07
PCB	1,000,000,000	ug/kg	100.000%	327.00	327.000	99.8%	7.71E-05	8.6E-06	2.2E-07
Totals			**100%**		**327.570**	**100%**		7.6E-04	2.0E-05

Notes:
Concentration of constituents in filter press solids based on the May 2008 analytical results for filter press solids collected at the GAFRI site.
The vapor pressure of PCBs at 25°C and at 49°C is assumed constant (7.71×10^{-5} mm Hg).